ASRA NAHEED MEDICAL COLLEGE LAHORE

MBBS 2013-14 (Physiology)

SYSTEM TEST:

BLOOD PHYSIOLOGY - 1

IMTIAZ - SAM

MULTIPLE CHOICE QUESTIONS (MCQS)

Total Marks 20

Select Single best answer,

All questions carry equal marks.

ROLL NO. 61

Dated: 17-04-2014

INSTRUCTIONS:

1- All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2- Any cutting and overwriting in objective part will not be accepted.

Q1. Inflammation is acute response of the tissue to injury. Which of the following plasma proteins is responsible for "walling off" effect of inflammation?

A. Prothrombin
B. Albumin
C. Fibrinogen ✓
D. γ Globulin
E. α Globulin

Q2. Serum differs from plasma in lacking:

A. Albumin
B. Fibrinogen ✓
C. Globulin
D. Ferritin
E. Apoferritin

Q3. Which are the most abundant of all the cells of the blood?

A. Lymphocytes
B. Neutrophils
C. Monocytes
D. Platelets
E. Red blood cells ✓

Q4. The following cell is devoid of the hemoglobin:

A. Erythrocyte
B. Reticulocyte
C. Intermediate normoblast
D. Late normoblast
E. Pronormoblast ✓

Q5. Maturation of erythroblasts involves:

A. Increase in size of cell
B. Condensation of chromosomes in nucleus
C. Accumulation of hemoglobin ✓
D. Pyknosis of nucleus
E. Breakage of cell membrane

Q6. The oxygen and carbon dioxide exchange in RBC's is maximum with the following configuration of red cell:

A. Spherical
B. Oval
C. Triangular
D. Rectangular
E. Biconcave ✓

Q7. In an adult human the red cells are formed continuously in the bone marrow of the:

A. Sesamoid bones
B. Shafts of long bones
C. Lower ends of the long bones
D. Membranous bones ✓
E. Phalangeal bones

Q8. Fe in the liver parenchymal cells is stored in the form of:

A. Apoferritin
B. Transferrin
C. Hemosiderine
D. Ferritin ✓
E. Hemochromatin

Q9. The protein responsible for iron transport in plasma is:

A. α 1-anti trypsin
B. Ferritin
C. Apo-transferrin ✓
D. Apo-ferritin
E. Ceruloplasmin

Q10. The erythropoietin level in the blood of the following will be high:

A. Olympic marathon runner ✓
B. End stage renal disease
C. Polycythemia vera
D. Aplastic anemia
E. Leukemia

A 24 year old African American man comes to emergency room 3 hours after the onset of ere back and chest pain which started when he s climbing up a mountain. He had an episode of ame symptoms five years ago. His values are Hb: 11g/dL, TLC: 12,000/mm^3, Reticulocyte count: 25%. What is the diagnosis of this patient?

A. Acute blood loss
B. Sickle cell anemia
C. Anemia of chronic disease
D. End stage kidney disease
E. Chronic blood loss

Q12. Which of the following applies to an AIDS patient?

A. They are capable of generating a normal antibody response.
B. They have increased helper T cells.
C. They have increased secretions of inter-leukins.
D. They have decreased helper T cells.
E. They have decreased red blood cells.

Q13. The actively phagocytic cell in the blood stream is:

A. Basophil
B. Neutrophil
C. Eosinophil
D. Lymphocyte
E. Monocyte

Q14. Combination of monocyte's mobile macrophages, fixed tissue macrophage, and a few specialized endothelial cells in the bone marrow, spleen and lymph nodes is called:

A. Complement system
B. Coagulation system
C. Immune system
D. Monocyte macrophage system
E. Lymphatic system

Q15. What happens following the presentation of an antigen by a macrophage?

A. Direct generation of antibodies
B. Activation of cytotoxic T cells
C. Increase in phagocytosis
D. Activation of helper T cells.
E. Activation of platelets

Q16. Bluish tint of the polycythemia person is because of excess of:

A. Myoglobin
B. Deoxygenated Hb
C. Oxygenated Hb
D. Reduced Hb
E. Sulphated Hb

Q17. A patient of leukemia in his peripheral blood film will show:

A. Increased numbers of abnormal white blood cells
B. Decreased no of platelets
C. Decreased no of RBCs
D. Bizarre and undifferentiated WBCs
E. All of the above

Q18. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing. This is an example of:

A. Innate immunity
B. Passive immunity
C. Acquired active immunity
D. Readymade immunity
E. None of the above

Q19. The preprocessing of T lymphocytes during embryonic life takes place in following organs:

A. Kidney
B. Liver
C. Bone marrow
D. Thymus
E. Lymph node

Q20. Following is a source of innate immunity in body:

A. Vaccination
B. Monocyte macrophage system
C. Cell mediated immunity
D. Humoral immunity
E. All of the above

...A NAHEED MEDICAL COLLEGE LAHORE

MBBS 2013-14 (Physiology)

SYSTEM TEST:

BLOOD PHYSIOLOGY - 2

MULTIPLE CHOICE QUESTIONS (MCQS)
Total Marks: 20
Select Single best answer,
All questions carry equal marks.
Dated: 30-04-2014

INSTRUCTIONS:

1- All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2- Any cutting and overwriting in objective part will not be accepted.

Q1. Antibodies are formed by?

A. Neutrophils
B. Basophils
C. T lymphocytes
D. Monocytes
E. Plasma cell

Q2. Which of the following applies to AIDS patients?

A. They are capable of generating a normal antibody response.
B. Have increased helper T cells.
C. They have increased secretions of inter-leukins.
D. They have decreased helper T cells.
E. They have decreased red blood cells

Q3. What happens following the presentation of an antigen by a macrophage?

A. Direct generation of antibodies
B. Activation of cytotoxic T cells
C. Increase in phagocytosis
D. Activation of helper T cells.
E. Activation of platelets

Q4. What causes the release of histamine in an allergic reaction?

A. Binding of IgM to basophils.
B. Binding of IgE to basophil and allergin
C. Release of histamine by helper T cells.
D. Free radical stimulation of endothelial cells
E. Release of histamine by macrophages

Q5. Intrinsic pathway of blood coagulation is a slower process as compared to the extrinsic pathway. It is initiated due to blood trauma or contact of blood with collagen. Which factor is activated initially in this pathway?

A. Factor VII
B. Factor II
C. Factor XII
D. Factor Xa
E. Factor X

Q6. The hypersensitivity to the toxin of poison ivy is a delayed allergic response. Which of the following cells are responsible for this response?

A. B lymphocytes
B. T lymphocytes
C. Basophils
D. Eosinophils
E. Monocytes

Q7. The rupturing of the cell membranes of the bacteria is caused by the lytic complex. Which product of the complement system is the lytic complex?

A. C5b67
B. C5b6789
C. C5b + C5a
D. C3b + C3a
E. C3b

Q8. Which of the following blood units carries the least risk of inducing an immediate reaction in a type B, Rh+ patient?

A. Type A +ive whole blood.
B. Type O +ive whole blood
C. Type AB +ive whole blood.
D. Type O +ive packed red cells
E. Type AB -ive packed red cells

Q9. Antibodies have been formed in the disease known as "idiopathic thrombocytopenia" against:

A. Endothelial lining
B. Platelets
C. Red blood cells
D. Basophils
E. Spleen

Q10. A 6 year old boy bruises easily and has previously bleeding gums. The maternal grandfather also had a similar disorder. You suspect the deficiency of:

A. Prothrombin activator
B. Factor II
C. Factor VIII
D. Factor X
E. Factor XIII

patient suffers from a congenital deficiency ctor XIII (fibrin-stabi izing factor). What would ysis of his blood reveal?

A. Prolonged prothrombin time
B. Prolonged whole blood clotting time
C. Prolonged partial thromboplastin time
D. Easily breakable clot
E. None of the above

Q12. What is the term out of following for adhesion of an invading bacteria with IgG and complement to facilitate recognition by a macrophage?

A. Chemokinesis
B. Opsonization
C. Phagolysosome fusion
D. Signal transduction
E. None of the above

Q13. Interleukin-2 (IL-2) is an important molecule in the immune response. What is its function?

A. It binds to and presents antigen
B. It stimulates proliferation of cytotoxic T cells
C. It kills virus-infected cells
D. It is required for proliferation of helper T cells
E. None of the above

Q14. Which of the following would most likely be used for prevention of sudden ischemic heart attack?

A. Herapin
B. Warfarin
C. Aspirin
D. Streptokinase
E. None of the above

Q15. Which of the following is appropriate treatment for massive pulmonary embolism?

A. Calcium
B. Vitamin K
C. Aspirin
D. Tissue plasminogin activator
E. None of the above

Q16. A 10-year-old boy with a prolonged prothrombin time (25 seconds; control, 11 to 15 seconds) is referred to a hematologist before undergoing surgery. The patient's bleeding time is normal. Which coagulation system is abnormal in this case?

A. Platelet production
B. Platelet function
C. Extrinsic pathway
D. Generation of clotting factors by the liver
E. None of the above

Q17. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing. This is an example of:

A. Innate immunity
B. Passive immunity
C. Acquired active immunity
D. Readymade immunity
E. None of the above

Q18. Which of the following is a true statement?

A. In a transfusion reaction, there is agglutination of the recipient blood
B. Shutdown of the kidneys following a transfusion reaction occurs slowly
C. Transfusion of Rh-positive blood into any Rh-negative recipient for the first time will result in an immediate transfusion reaction
D. A person with type AB blood is considered to be a universal recipient
E. None of the above

Q19. During cross matching of blood the compatibility is seen by reacting:

A. Donors RBCs with recipients serum
B. Recipient RBCs with donors serum
C. Donors serum with recipient serum
D. Donors RBCs with recipient RBC's
E. All of the above

Q20. Amjad got bilateral kidney failure due to diabetes. He was operated for a kidney transplant. The kidney was donated by his identical twin brother. This is known as:

A. Autograft
B. Isograft
C. Allograft
D. Xenograft
E. Heterograft

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PHYSIOLOGY DEPERTMENT
1ST YEAR MBBS 2013-14
UNIT TEST: NERVE & MUSCLE PHYSIOLOGY

MULTIPLE CHOICE QUESTIONS (MCQS)

Total Marks 20, Time = 20mins

Select Single best answer, all questions carry equal marks.

ROLL #:_____ DATED: 12-03-14

INSTRUCTIONS

1-All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2-Any cutting and overwriting in objective part will not be accepted.

Q1. Unmyelinated nerve conduction and saltatory conduction differs in that:

A. In unmyelinated nerve conduction energy is not a problem.
B. In unmyelinated nerve conduction velocity is slow.
C. In unmyelinated nerve conduction more energy is required and velocity is slow.
D. In saltatory nerve conduction more energy is required, velocity is slow and less space is utilized
E. None of the above

Q2. Chronaxie is defined as:

A. Double the rheobasic strength of stimulus
B. Minimum time required to excite the fiber when strength of the current used is double the rheobasic strength.
C. Minimum time required to excite the tissue when strength of the current is minimum.
D. Threshold voltage
E. Maximum strength of stimulus.

Q3. Skeletal muscle contraction is terminated by which action?

A. Removal of acetylcholine from the neuromuscular junction.
B. Removal of Calcium from the terminal of the motor neuron.
C. Closure of the post-synaptic nicotinic acetylcholine receptor.
D. Removal of sarcoplasmic calcium.
E. Return of dihydropyridine receptor to its resting conformation.

Q4. In what way does visceral smooth muscle differ from skeletal muscle?

A. Visceral smooth muscle can contract in response to stretch.
B. Visceral smooth muscle does not contain actin filaments.
C. Visceral smooth muscle is capable of generating only about half the maximal force of contraction.
D. Contraction of visceral smooth muscle is ATP dependent.
E. The rate of cross bridge cycling in visceral smooth muscle is approximately 100 times faster than that in skeletal muscle.

Q5. Calmodulin is most closely related, both structurally and functionally to which of the following proteins?

A. G- actin
B. Troponin I
C. Troponin C
D. Tropomyosin
E. Myosin light chain

Q6. The resting potential of a myelinated nerve fiber is primarily dependent on the concentrate ion gradient of which ion?

A. K^+
B. Na^+
C. Ca^{++}
D. Cl^-
E. HCO_3^-

Q7. Smooth muscle contains:

A. Z membranes for anchoring of actin filaments
B. Titin to keep actin and myosin at their places
C. Dense bodies for actin filaments
D. Troponin C for Ca attachment
E. Many nuclei in each cell

Q8. Which of the following drugs would likely to eliminate the patient's symptoms in myasthenia gravis?

A. Curare
B. Atropine
C. Neostigmine
D. Botulinum toxin antiserum
E. Halothane

Q9. Stimulation of nicotinic receptors by acetylcholine causes:

A. Contraction of skeletal muscles
B. Decrease in heart rate
C. Secretion of saliva
D. Constriction of pupil
E. Contraction of gut

Multiunit smooth muscle fibers are:

A. Supplied by many muscle fibers by a single nerve fiber
B. One muscle fiber supplied independently by one nerve fiber
C. Contract in response to hormonal stimulation
D. Do not obey the nervous stimulation
E. Are slowly contracting muscles

Q11. Plateau potential is not seen in:

A. Atrial fibers of the heart
B. Smooth muscle fibers of gut
C. Cardiac muscle fibers
D. Skeletal muscle fibers
E. Ventricular heart muscle

Q12. Axoplasm contains all the organelles of the neuroplasm except?

A. Mitochondria
B. Endoplasmic reticulum, Nissl grannuels and Golgi apparatus
C. Endoplasmic reticulum
D. Neurofilaments
E. Secretory vesicles

Q13. The repeated stimulation of skeletal muscle at a higher rate results in summation of successive contractions known as:

A. Tetany
B. Tetanus
C. Tetanization
D. Spatial summation
E. Convulsion

Q14. Which of the following is true regarding the release of neurotransmitter from synaptic vesicles?

A. Both calcium ad sodium influx
B. Calcium influx
C. Sodium influx
D. Potassium influx
E. Potassium efflux

Q15. End Plate Potential is described as:

A. A local potential
B. Obeys all or none laws
C. Has a refractory period
D. Is self propagated
E. Has absolute refractory period

Q16. Which phase of the action potential is caused by opening of activation gates of Na^+ channels in the nerve axon?

A. Upstroke
B. Downstroke
C. After depolarization
D. After Hyperpolarizationl
E. Hyperpolarization

Q17. The absolute refractory period of a nerve fiber:

A. Lasts through out an action potential
B. Is when the fiber is relatively more excitable than the relative refractory period
C. Occurs before the relative refractory period
D. Is due to low calcium concentration
E. Is when a stronger than normal stimulus is required to excite the fiber

Q18. While the skeletal muscle is shortening during isotonic contraction:

A. The muscle lifts a weight,
B. The length of the muscle decreases.
C. One end of the muscle is not fixed.
D. The tension developed in the muscle is minimal.
E. All of the above.

Q19. The fastest conducting nerve fibers are:

A. A delta type
B. Fibers for pain sensation
C. A alpha fibers
D. C type of fibers
E. Fibers carrying touch and temperature sensations

Q20. The myelin sheath to the nerve fibers in the central nervous system is provided by:

A. Schwann cells
B. Astrocytes
C. Microgliocytes
D. Oligodendrocytes
E. Fibroblast

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Department of Physiology
1ST YEAR MBBS 2013-14
System Test: HEART PHYSIOLOGY

MULTIPLE CHOICE QUESTIONS (MCQS) Total Marks 20, Time = 20mins
Select Single best answer, all questions carry equal marks.

ROLL #:_____ DATE: 09-04-14

INSTRUCTIONS
1-All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2-Any cutting and overwriting in objective part will not be accepted.

1. **Which of the following structures has the slowest rate of conduction of the cardiac action potential?**
   A. Atrial muscle
   B. Anterior intermodal pathway
   C. Atrioventricular bundle fibers
   D. Purkinje fibers
   E. Ventricular muscle

2. **Which of the following is true with regard to atrial systole?**
   A. Atrioventricular valves remain closed during atrial systole.
   B. Blood is forced through the venae cavae by atrial systole.
   C. Atrial filling can only occur during atrial systole.
   D. Atrial systole is responsible for moving over 25 percent of atrial blood into the ventricles.
   E. About 20 percent of atrial blood goes into the ventricles before atrial systole

3. **Which of the following cardiac activity is helped by AV nodal delay?**
   A. Ventricular filling
   B. Atrial filling
   C. Ventricular depolarization
   D. Ventricular contraction
   E. Atrial contraction

4. **Which of the following phases of the cardiac cycle follows immediately after the beginning of the QRS wave?**
   A. Isovolumic relaxation
   B. Ventricular ejection
   C. Atrial systole
   D. Diastasis
   E. Isovolumic contraction

5. **Which of the following type of ionic channels are responsible for the spike potential in ventricular muscles of heart?**
   A. Fast calcium channels
   B. Sodium leak channels
   C. Voltage gated sodium channels
   D. Slow calcium channels
   E. Voltage gated potassium channels

6. **Which of the following events is represented on the ECG?**
   A. SA node depolarization
   B. AV node depolarization
   C. His Bundle depolarization
   D. Atrial muscle depolarization
   E. Atrial repolarization

7. **Which cardiac event follows P wave?**
   A. Atrial contraction
   B. Ventricular contraction
   C. Atrial filling
   D. Ventricular filling
   E. Both A & B

8. **Which of the following pairs is INCORRECT concerning the Einthoven triangle?**
   A. Lead I: RA/LA
   B. Lead II: RA/LL
   C. Lead III: LA/LL
   D. All of the pairs are correct.
   E. None of all

9. **Increase in P-R interval is due to:**
   A. 1st degree heart block
   B. 2nd degree heart block
   C. Complete heart block
   D. Atrial flutter
   E. Cardiac arrest

10. **If the sino atrial node discharges at 0.00 seconds, when will the action potential normally arrive at the epicardial surface at the base of the left ventricle?**
    A. 0.22 second
    B. 0.18 second
    C. 0.16 second
    D. 0.12 second
    E. 0.09 second

Hyperkalemia causes?

A. Resting membrane potential of cardiac muscle more negative
B. As the membrane potential increases in cardiac muscle, intensity of action potential decreases.
C. The heart becomes flaccid and dilated.
D. Heart contractility becomes more vigorous.
E. Increases the conduction of cardiac impulse from atria to ventricles through the AV bundle.

12. **What is the resting membrane potential of the S-A nodal fibers?**

A. -100 millivolts
B. -90 millivolts
C. -80 millivolts
D. -55 millivolts
E. -20 millivolts

13. **Tetanization of heart is prevented by property of:**

A. Conductivity
B. Excitability
C. Rhythmicity
D. Long refractory period
E. Short refractory period

14. **Cause of refractory period in ventricular muscle is?**

A. Slow conduction of action potential.
B. Slow closure of voltage gated potassium channels.
C. Closure of inactivation gates of sodium channels till RMP.
D. Calcium influx in plateau phase.
E. None of the above

15. **Which activity of Cardiac valves produces the first heart sound?**

A. Closure of Atrio-Ventricular Valves
B. Closure of Semilunar valves
C. Opening of Semilunar valves
D. Opening of Atrio – Ventricular valves
E. None of the above

16. **Important histological features in cardiac muscle tissue responsible for excitation-contraction coupling is:**

A. Markedly developed ER and triads
B. Well developed T-tubules (More length and volume).
C. Well developed Ryanodine receptors.
D. C and D
E. Both B and C

17. **According to Einthoven's law, if the QRS voltage is -1.0 millivolt in lead I and +2.0 millivolts in lead III, what is the QRS voltage in lead II?**

A. 0.05 millivolt
B. 0.5 millivolt
C. 1.0 millivolt
D. 1.2 millivolts
E. 2.05 millivolts

18. **Automaticity is best developed in the cells of SA node because SA nodal tissue has?**

A. Na leak channels.
B. Slow calcium channels.
C. Voltage gated fast Na channels.
D. A and B
E. B and C

19. **Which of the following conditions in ventricular muscle decreases the tendency for circus movement?**

A. Administration of epinephrine
B. Dilated heart
C. Decreased conduction velocity
D. Repetitive electrical stimulation
E. Longer refractory period

20. **Vagal stimulation results in the fall of heart rate. This is due to increased permeability of sinoatrial nodal fiber membrane to:**

A. Ca^{++}
B. Cl^{-}
C. K^{+}
D. Na^{+}
E. Na^{+} and Ca^{++}

LAHORE

Department of Physiology
1ST YEAR MBBS 2013-14
System Test: CIRCULATORY SYSTEM

Total Marks 20, Time = 20mins
Select Single best answer, all questions carry equal marks.
ROLL #:_____ DATE: 14-05-14

INSTRUCTIONS
1-All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins
2-Any cutting and overwriting in objective part will not be accepted

1. **Which of the following increases the plateau level of cardiac output curve?**
   A. Myocarditis
   B. Cardiac temponade
   C. Myocardial infarction
   D. Mitral stenosis
   E. Decreased parasympathetic stimulation of heart

2. **Total peripheral resistance increases in which of the following?**
   A. Anemia
   B. Exercise
   C. Sympathetic stimulation
   D. Arteriovenous fistula
   E. None of the above

3. **Regarding systemic vascular resistance, choose the best statement?**
   A. Is less than the pulmonary vascular resistance
   B. Directly proportional to the blood flow of an organ
   C. Is inversely proportional to the viscosity of blood
   D. Mainly effects the diastolic blood pressure
   E. Is not affected by the sympathetic stimulation

4. **Which of the following would be expected to occur during central nervous system ischemic response?**
   A. Decreased heart rate
   B. Increased parasympathetic stimulation
   C. Decreased total peripheral resistance
   D. Enhanced sympathetic stimulation and generalized vasoconstriction
   E. Decreased arterial blood pressure

5. **In which of the following conditions there will be a decreased cardiac output?**
   A. Hyperthyroidism
   B. Beriberi
   C. Atrioventricular fistula
   D. Anemia
   E. Acute myocardial infarction

6. **Right ventricular failure leads to:**
   A. Pulmonary edema
   B. Reduced systemic arterial pressure
   C. Decreased concentration of aldosterone in the blood
   D. Edema of feet
   E. Edema of face

7. **Which of the following does not cause hypo effective heart?**
   A. Inhibition of sympathetic nervous excitation of heart
   B. Coronary artery blockage
   C. Valvular heart disease
   D. Cardiac hypoxia
   E. Sympathetic stimulation

8. **Which is not true regarding second heart sound?**
   A. Duration of second heart sound is about 0.11 second
   B. Vibration produced by sudden closure of semilunar valves
   C. Dub is indicative for second heart sound
   D. Second heart sound duration is more than first heart sound
   E. Audible with the stethoscope

9. **Mean arterial Pressure is?**
   A. Systolic blood pressure + Diastolic blood pressure / 2
   B. It's value is nearer to systolic blood pressure than diastolic blood pressure
   C. 50% of sum of Systolic and Diastolic blood pressure
   D. Systolic blood pressure – Diastolic blood pressure
   E. 1/3 Pulse pressure + Diastolic blood pressure

10. **Which of the following structures are not innervated?**
    A. Arterioles
    B. Post capillary venules
    C. Venuoles
    D. Pre-capillary sphincters
    E. Arteries

...the arterial and venous pressures come to equilibrium when all flow in the systemic circulation ceases at a pressure of 7mmHg and this is called?

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

12. **Which of the following parts of circulation has highest compliance?**

A. Capillaries
B. Large arteries
C. Veins
D. Aorta
E. Small arteries

13. **If coronary artery diameter is reduced by 50% expected reduction in blood flow would be how many times less?**

A. 4 times
B. 12 times
C. 64times
D. 16 times
E. 8 times

14. **Which statement is correct regarding effects of hypoxia in pulmonary circulation?**

A. It causes vasodilatation
B. It causes vasoconstriction
C. Increases pulmonary blood flow
D. Have no effect on pulmonary blood flow
E. None of the above

15. **Loss of vasomotor tone after a history of spinal anesthesia is indicative of:**

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

16. **The compensatory mechanisms in non-progressive shock include all of the following except:**

A. Arteriolar constriction
B. Increased heart rate
C. Sympathetic over activity
D. Sludging of small blood vessels
E. Increased level of angiotensin 2

17. **Generalized cellular deterioration includes all of the following in irreversible shock except:**

A. Failure of Na K pump
B. Depressed mitochondrial activity
C. Increased transcription & translation
D. Decreased glucose uptake
E. Breaking of liposomal membrane

18. **Regarding Starling forces, which of the following tends to decrease capillary filtration rate?**

A. Capillary hydrostatic pressure
B. Interstitial hydrostatic pressure
C. Plasma colloidal osmotic pressure
D. Lymphatic pump activity
E. Interstitial colloidal osmotic pressure

19. **35% loss of total blood volume leads to:**

A. Compensated shock
B. Progressive shock
C. Irreversible shock
D. No effect on cardiac output & HP
E. None of the above

20. **Cardiogenic shock may be due to the following reasons except:**

A. Severe heart valve dysfunction
B. Heart arrhythmias
C. Hypothyroidism
D. Septicemia
E. Myocardial infarction

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(10) Blood

DEPARTMENT OF PHYSIOLOGY

GRAND TEST

1st YEAR MBBS (Session 2013-14)

MULTIPLE CHOICE QUESTIONS (MCQS)
Select Single best answer, all questions carry equal marks.

Total Marks: 50 Dated: 18-08-14

INSTRUCTIONS
1. All objective questions are to be attempted on the paper and returned to the invigilator within 50 minutes.
2. Any cutting and overwriting in objective part will not be accepted.

Q1. Total body fluid is 42 liters in normal adult man and is 60 % of the body. The fluid is distributed as:

A. One third intra cellular, one third extra cellular and remaining in blood.
B. One third intra cellular, two third extra cellular.
C. Two third intra cellular, one third extra cellular
D. One third intracellular, remaining in plasma, RBCs and intra cellular.
E. None of the above

Q2. Negative feedback mechanisms classically have:

A. Good gain
B. Less Error
C. Less Correction
D. A receptor, an afferent, a center to process the information, an efferent nerve and effectors.
E. Ability to increase the change

Q3. The gene expression includes:

A. Transcription only.
B. Posttranslational processing
C. Translation only
D. Peptide linkage only.
E. Transcription, translation and protein synthesis

Q4. Transcription refers to the process:

A. Where a mRNA is used as a template for protein production.
B. Where a DNA sequence is copied into RNA for the purpose of gene expression.
C. Where DNA wraps around histones to form a nucleosome.
D. Of replication of DNA before mitosis.
E. Of replication before meiosis

Q5. Which of the following transport mechanisms is not rate-limited by an intrinsic V_{max}?

A. Simple diffusion through protein channels
B. Facilitated diffusion via carrier proteins
C. Primary active transport via carrier proteins
D. Secondary co-transport
E. Secondary counter-transport

Q6. Most of plasma proteins are synthesized in liver except:

A. Albumin
B. Fibrinogen
C. Globulin
D. Gama globulin
E. Prothrombin

Q7. Plasma colloid osmotic pressure regulation is an important function of plasma proteins. The protein most responsible for this function is:

A. Fibrinogen
B. Albumin
C. Alpha globulin
D. Transferrin
E. Immunoglobulin

Q8. Hemoglobin A2 is the most abundant type of normal hemoglobin present in an adult. It is formed of:

A. 2 alpha 2 beta chains
B. 2 alpha 2 gamma chain.
C. 2 alpha 2 delta chains
D. 2 beta 2 delta chains
E. 4 gamma chains

Q9. Before the development of a person's own defence system the infant body has to rely upon the antibodies of maternal origin which is known as:

A. Active acquired immunity
B. Passive adaptive immunity
C. Active adaptive immunity
D. Artificial acquired immunity
E. Innate immunity

Q10. Lymphocytes responsible for Cell Mediated Immunity are processed in:

A. Bone Marrow
B. Blood vessels
C. Spleen
D. Thymus
E. Liver

Q11. Which of the following lymphocytes are major regulators of almost all immune functions?

A. Cytotoxic T cells
B. Suppressor T cells
C. **Helper T cells**
D. T lymphocyte memory cells
E. None of the above

Q12. Formation of antibodies to provide humoral immunity is the function of:

A. T lymphocytes
B. Macrophages
C. Helper T cells
D. Cytotoxic T cells
E. **Plasma cells**

Q13. Prothrombin level falls in the blood due to lack of:

A. Vitamin B12
B. **Vitamin K**
C. Phospholipids
D. Platelets
E. Sodium

Q14. Clotting of blood by extrinsic pathway is triggered by:

A. Fibrinogen activation
B. **Tissue trauma (tissue thromboplastin (F-III))**
C. Hageman factor (F-XII)
D. Exposed collagen
E. Blood trauma

Q15. If a person blood group is O he can receive blood from:

A. A & B group
B. AB group
C. AB,AB,O group
D. **Only O group**
E. None of the above

Q16. What occurs following presentation of an antigen by an infected cell?

A. Generation of antigen antibody complex
B. Activation of cytotoxic T-cells
C. Increase in phagocytosis
D. Release of histamine by mast cells
E. **Activation of helper T-cells**

Q17. If Rh +ve person receives Rh [illegible] there would be:

A. Sensitization of recepient immune system
B. RBCs hemolysis.
C. Anaphylaxis
D. **No risk of complication**
E. Acute kidney shutdown

Q18. What causes the release of histamine in an allergic reaction?

A. Binding of IgM to basophils.
B. **Binding of IgE to mast cells.**
C. Release of histamine by helper T cells.
D. Free radical stimulation of endothelial cells
E. Release of histamine by macrophages

Q19. Chronaxie is defined as:

A. Double the rheobasic strength
B. **Minimum time required to excite the fiber when strength of the current used is double the rheobasic strength.**
C. Minimum time required to excite the tissue when strength of the current is minimum.
D. Threshold voltage
E. Maximum strength of stimulus

Q20. The myelin sheath to the nerve fibers in the central nervous system is provided by:

A. Schwann cells
B. Astrocytes
C. Microgliocytes
D. **Oligodendrocytes**
E. Fibroblast

Q21. The RMP donated by the Na K pump to excitable cell membrane is:

A. -90 mv
B. +4mv
C. **-4mv**
D. +94 mv
E. -70m

Q22. Calcium ions have the following role in skeletal muscle contraction:

A. To uncover the active sites on actin filaments
B. **To combine with troponin C**
C. To combine with tropomyosin
D. To make a bond with titin
E. To cause narrowing of I band

NAHEED MEDICAL COLLEGE LAHORE

MBBS 2013-14 (Physiology)

SYSTEM TEST:

BLOOD PHYSIOLOGY - 2

MULTIPLE CHOICE QUESTIONS (MCQS)
Total Marks: 20
Select Single best answer,
All questions carry equal marks.
Dated: 10-02-2014

INSTRUCTIONS:

1- All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2- Any cutting and overwriting in objective part will not be accepted.

Q1. Antibodies are formed by?

A. Neutrophils
B. Basophils
C. T lymphocytes
D. Monocytes
E. Plasma cell

Q2. Which of the following applies to AIDS patients?

A. They are capable of generating a normal antibody response.
B. Have increased helper T cells.
C. They have increased secretions of inter-leukins.
D. They have decreased helper T cells.
E. They have decreased red blood cells

Q3. What happens following the presentation of an antigen by a macrophage?

A. Direct generation of antibodies
B. Activation of cytotoxic T cells
C. Increase in phagocytosis
D. Activation of helper T cells.
E. Activation of platelets

Q4. What causes the release of histamine in an allergic reaction?

A. Binding of IgM to basophils.
B. Binding of IgE to basophil and allergin
C. Release of histamine by helper T cells.
D. Free radical stimulation of endothelial cells
E. Release of histamine by macrophages

Q5. Intrinsic pathway of blood coagulation is a slower process as compared to the extrinsic pathway. It is initiated due to blood trauma or contact of blood with collagen. Which factor is activated initially in this pathway?

A. Factor VII
B. Factor II
C. Factor XII
D. Factor Xa
E. Factor X

Excess bleeding.
1- vit K defiency.
2. Hemophilia.
3. Thrombocytopenia.

Q6. The hypersensitivity to the toxin of poison ivy is a delayed allergic response. Which of the following cells are responsible for this response?

A. B lymphocytes
B. T lymphocytes
C. Basophils
D. Eosinophils
E. Monocytes

Q7. The rupturing of the cell membranes of the bacteria is caused by the lytic complex. Which product of the complement system is the lytic complex?

A. C5b67
B. C5b6789
C. C5b + C5a
D. C3b + C3a
E. C3b

Q8. Which of the following blood units carries the least risk of inducing an immediate reaction in a type B, Rh- patient?

A. Type A +ive whole blood.
B. Type O +ive whole blood.
C. Type AB +ive whole blood.
D. Type O +ive packed red cells
E. Type AB –ive packed red cells

Q9. Antibodies have been formed in the disease known as "idiopathic thrombocytopenia" against:

Dec Platelet

A. Endothelial lining
B. Platelets
C. Red blood cells
D. Basophils
E. Spleen

Q10. A 6 year old boy bruises easily and has previously bleeding gums. The maternal grandfather also had a similar disorder. You suspect the deficiency of:

A. Prothrombin activator
B. Factor II
C. Factor VIII
D. Factor X
E. Factor XIII

Q11. A patient suffers from a congenital deficiency of factor XIII (fibrin-stabilizing factor). What would analysis of his blood reveal?

A. Prolonged prothrombin time
B. Prolonged whole blood clotting time
C. Prolonged partial thromboplastin time
D. Easily breakable clot
E. None of the above

Q12. What is the term out of following for adhesion of an invading bacteria with IgG and complement to facilitate recognition by a macrophage?

A. Chemokinesis
B. Opsonization
C. Phagolysosome fusion
D. Signal transduction
E. None of the above

Q13. Interleukin-2 (IL-2) is an important molecule in the immune response. What is its function?

A. It binds to and presents antigen
B. It stimulates proliferation of cytotoxic T cells
C. It kills virus-infected cells
D. It is required for proliferation of helper T cells
E. None of the above

Q14. Which of the following would most likely be used for prevention of sudden ischemic heart attack?

A. Herapin
B. Warfarin
C. Aspirin
D. Streptokinase
E. None of the above

Q15. Which of the following is appropriate treatment for massive pulmonary embolism?

A. Calcium
B. Vitamin K
C. Aspirin
D. Tissue plasminogin activator
E. None of the above

Q16. A 10-year-old boy with a prolonged prot time (25 seconds; control, 11 to 15 seconds) is r to a hematologist before undergoing surgery. patient's bleeding time is normal. Which coagula system is abnormal in this case?

A. Platelet production
B. Platelet function
C. Extrinsic pathway
D. Generation of clotting factors by the liver
E. None of the above

Q17. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing. This is an example of:

A. Innate immunity
B. Passive immunity
C. Acquired active immunity
D. Readymade immunity
E. None of the above

Q18. Which of the following is a true statement?

A. In a transfusion reaction, there is agglutination of the recipient blood
B. Shutdown of the kidneys following a transfusion reaction occurs slowly
C. Transfusion of Rh-positive blood into any Rh-negative recipient for the first time will result in an immediate transfusion reaction
D. A person with type AB blood is considered to be a universal recipient
E. None of the above

Q19. During cross matching of blood the compatibility is seen by reacting:

A. Donors RBCs with recipients serum
B. Recipient RBCs with donors serum
C. Donors serum with recipient serum
D. Donors RBCs with recipient RBCs
E. All of the above

Q20. Amjad got bilateral kidney failure due to diabetes He was operated for a kidney transplant. The kidney was donated by his identical twin brother. This is known as:

A. Autograft
B. Isograft
C. Allograft
D. Xenograft
E. Heterograft

A. Prolonged prothrombin time
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Q14. Which of the following would most likely be used for prophylaxis of transient ischemic heart attack?

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B. Warfarin
C. Aspirin
D. Streptokinase
E. None of the above

Q15. Which of the following is appropriate therapy for massive pulmonary embolism?

A. Herapin
B. Warfarin
C. Aspirin
D. Tissue plasminogin activator
E. None of the above

A. Type A-positive whole blood
B. Type O-positive whole blood
C. Type AB-positive whole blood
D. Type O-positive packed red cells
E. Type AB-negative packed red cells

Q17. A [illegible] system is about to [illegible]

A. Platelet production
B. Platelet formation
C. Extrinsic pathway
D. Generation of clotting factors by the liver
E. None of the above

Q18. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing. This is an example of:

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Q19. The preprocessing of T lymphocytes during embryonic life takes place in following organs:

A. Kidney
B. Liver
C. Bone marrow
D. Thymus
E. Lymph node

Q20. Following is a source of innate immunity in body:

A. Vaccination
B. Monocyte macrophage system
C. Cell mediated immunity
D. Humoral immunity
E. All of the above

AZRA NAHEED MEDICAL COLLEGE LAHORE

MBBS 2013-14 (Physiology)

REVISION TEST:

BLOOD PHYSIOLOGY - 1

MULTIPLE CHOICE QUESTIONS (MCQS)

Total Marks 20

Select Single best answer,

All questions carry equal marks.

ROLL #: 037 Dated: 17-11-2014

INSTRUCTIONS:

1- All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2- Any cutting and overwriting in objective part will not be accepted.

Q1. Inflammation is acute response of the tissue to injury. Which of the following plasma proteins is responsible for "walling off" effect of inflammation?

A. Prothrombin
B. Albumin
C. Fibrinogen
D. γ Globulin
E. α Globulin

Q2. Serum differs from plasma in lacking:

A. Albumin
B. Fibrinogen
C. Globulin
D. Ferritin
E. Apoferritin

Q3. Which are the most abundant of all the cells of the blood?

A. Lymphocytes
B. Neutrophils
C. Monocytes
D. Platelets
E. Red blood cells

Q4. The following cell is devoid of the hemoglobin:

A. Erythrocyte
B. Reticulocyte
C. Intermediate normoblast
D. Late normoblast
E. Pronormoblast

Q5. Maturation of erythroblasts involves:

A. Increase in size of cell
B. Condensation of chromosomes in nucleus
C. Accumulation of hemoglobin
D. Pyknosis of nucleus
E. Breakage of cell membrane

Q6. The oxygen and carbon dioxide exchange in RBCs is maximum with the following configuration of red cell:

A. Spherical
B. Oval
C. Triangular
D. Rectangular
E. Biconcave

Q7. In an adult human the red cells are formed continuously in the bone marrow of the:

A. Sesamoid bones
B. Shafts of long bones
C. Lower ends of the long bones
D. Membranous bones
E. Phalangeal bones

Q8. Fe in the liver parenchymal cells is stored in the form of:

A. Apoferritin
B. Transferrin
C. Hemosiderine
D. Ferritin
E. Hemochromatin

Q9. The protein responsible for iron transport in plasma is:

A. α 1-anti trypsin
B. Ferritin
C. Apo-transferrin
D. Apo-ferritin
E. Ceruloplasmin

Q10. The erythropoietin level in the blood of the following will be high:

A. Olympic marathon runner
B. End stage renal disease
C. Polycythemia vera
D. Aplastic anemia
E. Leukemia

Q11. A 24 year old African American man comes to the emergency room 3 hours after the onset of sev. re back and chest pain which started when he was climbing up a mountain. He had an episode of same symptoms five years ago. His values are Hb: 11g/dL, TLC: 12,000/mm^3, Reticulocyte count: 25%. What is the diagnosis of this patient?

A. Acute blood loss
B. Sickle cell anemia
C. Anemia of chronic disease
D. End stage kidney disease
E. Chronic blood loss

Q12. Which of the following applies to an AIDS patient?

A. They are capable of generating a normal antibody response.
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Q13. The actively phagocytic cell in the blood stream is:

A. Basophil
B. Neutrophil
C. Eosinophil
D. Lymphocyte
E. Monocyte

Q14. Combination of monocyte's mobile macrophages, fixed tissue macrophage, and a few specialized endothelial cells in the bone marrow, spleen and lymph nodes is called:

A. Complement system
B. Coagulation system
C. Immune system
D. Monocyte macrophage system
E. Lymphatic system

Q15. What happens following the presentation of an antigen by a macrophage?

A. Direct generation of antibodies
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E. Activation of platelets

Q16. Bluish tint of the polycythemia person is because excess of:

A. Myoglobin
B. Deoxygenated Hb
C. Oxygenated Hb
D. Reduced Hb
E. Sulphated Hb

Q17. A patient of leukemia in his peripheral blood film will show:

A. Increased numbers of abnormal white blood cells
B. Decreased no of platelets
C. Decreased no of RBCs
D. Bizarre and undifferentiated WBCs
E. All of the above

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Q14. A 28-years old lady with Rh- ve blood group delivers Rh+ve baby. To prevent the Rh-incompatibility in subsequent pregnancy, the most appropriate measure is to give

A. Blood transfusion
B. **Anti Immunoglobulin D**
C. Amniocentesis
D. Corticosteroids
E. None of the above

Q15Antibodies have been formed in the disease known as "idiopathic thrombocytopenia" against:

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C. Tissue macrophages
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Q16. A patient suffers from a congenital deficiency of factor XIII (fibrin-stabilizing factor). What would analysis of his blood reveal?

A. Prolonged Prothrombin time
B. Prolonged whole blood clotting time
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Q17.Regarding the ABO agglutinins following is the true statament:

A. These are IgG or Ig M
B. Produced after birth
C. Maximum leve reaches at age of 10years
D. Will be absent from plasma if corresponding antigen is present on RBC surface
E. All of the above

Q18. Which of the following is correct regarding changes in the stored blood.

A. increase in the 2,3-biphosphoglycerate
B. Increased activity of sodium-potassium pump
C. Rise in the ATP levels
D. **Disappearance of the platelets and granulocytes**
E. No change in the clotting factors V and VIII

Q19. The complications of the thromboembolism include all of the following Except

A. Ischemic heart disease
B. **Migraine**
C. Pulmonary embolism
D. Transient ischemic attacks
E. Deep venous thrombosis

Q20. Imran got liver failure due to chronic liver disease. He was operated for a Liver transplant from a cadaver. Such grafting is known as:

A. Autograft
B. Isograft
C. **Allograft**
D. Xenograft
E. Heterograft

HEART PHYSIOLOGY

Q1.Which of the following type of ionic channels is responsible for the spike potential in ventricular muscles of heart?

A. Fast calcium channels
B. Sodium leak channels
C. **Voltage gated sodium channels**
D. Slow calcium channels
E. Voltage gated potassium channels

Q2.Tetanization of heart is prevented by property of:

A. Rhythmicity
B. **Long refractory period**
C. Short refractory period
D. Conductivity
E. Chronaxie

Q3. Purkinje fibers of the heart

A. Are modified myocardial cells
B. Can conduct impulses as fast as some nerves
C. Are confined to the ventricles
D Excites the myocardium of the interventricular region before the outer walls of the ventricles
E. **All of the above**

Q4. Vagal stimulation results in the fall of heart rate. This is due to increased permeability of sinoatrial nodal fiber membrane to:

A. Ca^{++}
B. Cl^{-}
C. K^{+}
D. Na^{+}
E. Na^{+} and Ca^{++}

Q5.What is the resting membrane potential of the S-A nodal fibers?

A. -100 millivolts
B. -90 millivolts
C. -80 millivolts
D. **-55 millivolts**
E. -65 millivolts

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Blood 2

Q1. Which of the following statements regarding platelets is true?

A. Are formed in the lymphoid tissue and bone marrow.
B. Have no nucleus but can contract due to the presence of contractile proteins.
C. Do not show adhesiveness while coming in contact with collagen
D. has a life span of 120 days
E. Prevent intravascular coagulation if endothelium gets injured.

Q2. Which of the following factors is important in platelet aggregation?

A. ADP
B. Contact with collagen
C. Binding of platelet with fibrin meshwork
D. A,B and C are true
E. Calcium ions

Q3.The initial hemostatic plug contains

A. Thrombin
B. Fibrin entirely
C. Protein C and S
D. Aggregated platelets and other blood cells
E. Plasminogen activator

Q4. The blood in the vessels does not clot in a normal person .because:

A. Thrombin has positive feedback effect on plasminogen
B. Vascular endothelium is smooth and coated with glycocalyx
C. Both A and B are true
D. Contact of the blood with extra vascular tissue.
E. All of the above

Q5. Following coagulation factors are vitamin K dependent

A. I,X,XI
B. II, VII &XII
C .VII& XI
D. II, VII. &X
E. XI&XII

Q6.A 9 years old boy bruises easily & has bleeding gums on several occasions for last 8 months A maternal uncle has a bleeding disorder. Which of the following is the most likely coagulation factor deficiency?

A. Factor III
B. Factor VII
C. Factor VIII
D. Factor X
E. Factor XIII

Q7.The most important natural anticoagulant present in the blood is

A. Warfarin
B. Heparin
C. Fibrin
D. Plasminogen
E. Prothrombin

Q8.Which of the following is true regarding blood group antigens?

A. Are present on the surface of red blood cells.
B. Are called agglutinogen.
C. Both A and B
D. Are formed by the red bone marrow.
E. All of the above

Q9.If a person blood group is O he can receive blood from:

A. A & B group
B. AB group
C. A,B,AB,O group
D. Only O group
E. None of the above

Q10.During cross matching of blood the compatibility is seen by reacting:

A. Recipient RBCs with donors serum
B. Donors serum with recipient serum
C. Donors RBCs with recipient RBCs
D. Donors RBCs with recipients serum
E. All of the above

Q11.All of the following conditions cause excessive bleeding in human beings except

A. Chronic liver disease.
B. Thrombocytopenia
C. Disseminated Intravascular Coagulation
D. Hemophilia
E. Atherosclerosis

Q12. Regarding the Rh positive blood group

A. Its genotype may be dd
B. Can result in severe reaction if transfused to a Rh negative person for the first time
C. It is due to presence of D antigen on the surface of RBC
D. Majority of the population is Rh negative
E. If a Rh +Orecieves O negative severe reaction will occur.

Q13.All of the following statements regarding Antibodies against a Rhesus positive baby in a rhesus negative mother are true except

A. develops at first trimester of pregnancy
B. Are of IgG type in nature and can cross the placenta.
C. Leads to the breakdown of Red blood cells of the mother
D. Can cause Kernicterus in the new-born
E. Causes no haemolytic reaction in first pregnancy.

Q1. **Which of the following is true regarding myenteric plexus?**

A. Is located between the longitudinal and circular muscle layer in the gut wall.
B. Mainly controls motor activity along the whole length of the gut
C. Increases the tonic contractions of the gut wall.
D. Causes more rapid movements of the peristaltic waves by increasing the velocity of conduction of excitatory waves.
E. **All of the above**

Q2. **The origin of electrical slow wave activity in gastrointestinal tract smooth muscle is**

A. The smooth muscle of the circular muscle layer
B. Longitudinal muscle layer
C. The smooth muscle of the muscularis mucosa
D. **The interstitial cells of Cajal**
E. The myenteric plexus

Q3. **Which of the following regarding swallowing reflex is true?**

A. The closure of the glottis prevents the food being aspirated into the nasopharynx
B. The reflex centre lies in the spinal cord
C. Is mediated by pelvic parasympathetic nerves
D. **Includes the inhibition of respiration in pharyngeal stage**
E. All of the above

Q4. **Which of the following statements regarding hydrochloric acid (HCl), an important constituent of gastric juice is NOT correct?**

A. Converts pepsinogen to pepsin for chemical digestion
B. Provides optimal pH environment for pepsin
C. Destroys some bacteria
D. Inhibit the small intestinal mucosa to release secretin and CCK
E. **Promotes the absorption of Ca^{2+} and Fe^{2+} in small intestine**

Q5. **Gastrin stimulates HCl secretion by the parietal cells of the gastric glands .Which of the following mechanism is involved?**

A. Directly through a cyclic AMP mediated Pathway on parietal cell
B. By acting on a gastrin receptors located on the Parietal cell
C. Indirectly via stimulation of enterochromaffin cells and release of histamine
D. Directly by increasing calcium and activating Kinases in parietal cell
E. B, C and D are true

testing reveal that he has got selective destruction of gastric glands of the stomach .This condition would most dispose the patient to which of the following?

A. Gastric ulcer
B. **Pernicious Anemia**
C. Steatorrhea(fat in stools)
D. Tropical sprue
E. Duodenal ulcer

Q7. **The major factor that protects the duodenal mucosa from damage by gastric acid is**

A. Bicarbonate of pancreatic juice and bile
B. Secretin secreted in response to acid causes pancreas to secrete HCO3.
C. Reflex inhibition of acid secretion due to acid in the duodenum
D. Mucus secreted by the mucous glands
E. **All of the above**

Q8. **Which of the following normally prevents the autodigesion of the pancreas?**

A. Trypsinogen
B. Secretin
C. Histamine
D. **Trypsin inhibitor**
E. Cholycystokinin

Q9. **Regarding lower esophageal sphincter, which of the following is correct?**

A. Remains tonically constricted
B. Peristaltic swallowing wave passes down esophagus
C. Receptive relaxation of gastro-esophageal sphincter allows food to pass easily to the stomach
D. Sphincter does not relax satisfactorily condition called achalasia
E. **All of the above**

Q10. **A person came to outdoor with history of repeated attacks of pain in right upper abdomen, feeling indigestion after taking fats and developed jaundice 1 week ago .On blood test he is Hepatitis A,B,C,D and E negative .An ultrasound of him reports presence of multiple gall stones .Which type of Jaundice he is most probably suffering from?**

A. Hepatic
B. Prehepatic
C. Hemolytic
D. **Obstructive**
E. None of the above

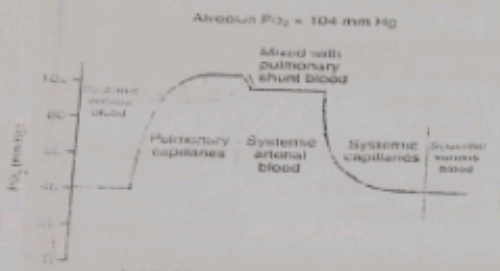
...ate lethal effects of oxygen poisoning can ...uted to the dysfunction of which of the ...ving organs?

A. Lungs
B. Heart
C. Kidneys
D. Liver
E. Brain

Q11. Features of hypercapnia include all of the following except

A. Confusion
B. Headache
C. Respiratory depression
D. Normal plasma bicarbonate level
E. Decreased sensory acuity

Q12. "Venous admixture is shown in this graph. What is the probable cause of venous admixture?



A. PO2 in the pulmonary capillaries blood is 100mmHg.
B. Mixing of oxygenated blood in pulmonary capillaries with bronchial capillary plexuses
C. That PO2 of the blood entering the left heart is about 95mmHg
D. That PO2 of the blood in the systemic veins is 40mmHg
E. All of the above

Q13. Binding of oxygen with Hb tends to displace CO2 from the blood in the lungs. This is known as

A. Bohr effect
B. Haldane effect
C. Cushing effect
D. Edinbridge effect
E. None of the above

Q14. Acceleration greater than 4 to 6 G causes:

A. Black-out of vision
B. Unconsciousness
C. Fracture of the vertebrae
D. Death
E. All of the above

Q15. The effects of the negative G on the body causes:

A. Permanent damage of the body tissues
B. Intense momentary hyperemia of the head
C. The temporarily blindness with red-out.
D. All of the above
E. None of the above

Q16. The normal value of FEV1/FVC ratio is:

A. 45%
B. 60%
C. 80%
D. 95%
E. 100%

Q17. In a person breathing the atmospheric air, the PO_2 in alveolar air decreases up till 18 mmHg at altitude of:

A. 10,000 feet
B. 20,000 feet
C. 30,000 feet
D. 40,000 feet
E. 50,000 feet

Q18. The oxy hemoglobin dissociation curve during the severe exercise :

A. Shifts to left
B. Shifts to right
C. Does not shift
D. Becomes more steep
E. None of the above

Q19. Which of the following mechanism is responsible for producing cyanosis?

A. Increased Carbon dioxide in the blood
B. Deoxygenation of hemoglobin in the blood
C. Decreased amount of hemoglobin in the blood
D. Increased carboxy hemoglobin in the blood
E. Increased amount of HCO_3^- ions in the blood

Q20. A 50 years old woman is diagnosed with pneumonia that is localized to one lung on chest X-ray. The doctor has advised her lung function test. Which of the following statements is correct?

A. Arterial PO2 and arterial PCO2 both are less than normal
B. FEV1/FVC ratio remains unchanged
C. Vital capacity is more than normal
D. Residual volume and total lung capacity is more than normal
E. All of the above

Q11. Which of the following lymphocytes are major regulators of almost all immune functions?

A. Cytotoxic T cells
B. Suppressor T cells
C. **Helper T cells**
D. T lymphocyte memory cells
E. None of the above

Q12. Formation of antibodies to provide humoral immunity is the function of:

A. T lymphocytes
B. Macrophages
C. Helper T cells
D. Cytotoxic T cells
E. **Plasma cells**

Q13. Prothrombin level falls in the blood due to lack of:

A. Vitamin B12
B. **Vitamin K**
C. Phospholipids
D. Platelets
E. Sodium

Q14. Clotting of blood by extrinsic pathway is triggered by:

A. Fibrinogen activation
B. **Tissue trauma (tissue thromboplastin (F-III))**
C. Hageman factor (F-XII)
D. Exposed collagen
E. Blood trauma

Q15. If a person blood group is O he can receive blood from:

A. A & B group
B. AB group
C. A,B,AB,O group
D. **Only O group**
E. None of the above

Q16. What occurs following presentation of an antigen by an infected cell?

A. Generation of antigen antibody complex
B. Activation of cytotoxic T-cells
C. Increase in phagocytosis
D. Release of histamine by mast cells
E. **Activation of helper T-cells**

Q17. If Rh +ve person receives Rh -ve blood there would be:

A. Sensitization of recepient immune system
B. **RBCs hemolysis.**
C. Anaphylaxis
D. **No risk of complication**
E. Acute kidney shutdown

Q18. What causes the release of histamine in an allergic reaction?

A. Binding of IgM to basophils.
B. **Binding of IgE to mast cells.**
C. Release of histamine by helper T cells.
D. Free radical stimulation of endothelial cells
E. Release of histamine by macrophages

Q19. Chronaxie is defined as:

A. Double the rheobasic strength
B. **Minimum time required to excite the fiber when strength of the current used is double the rheobasic strength.**
C. Minimum time required to excite the tissue when strength of the current is minimum.
D. Threshold voltage
E. Maximum strength of stimulus

Q20. The myelin sheath to the nerve fibers in the central nervous system is provided by:

A. Schwann cells
B. Astrocytes
C. Microgliocytes
D. **Oligodendrocytes**
E. Fibroblast

Q21. The RMP donated by the Na K pump to excitable cell membrane is:

A. -90 mv
B. +4mv
C. **-4mv**
D. +94 mv
E. -70m

Q22. Calcium ions have the following role in skeletal muscle contraction:

A. To uncover the active sites on actin filaments
B. **To combine with troponin C**
C. To combine with tropomyosin
D. To make a bond with titin
E. To cause narrowing of I band

RA NAHEED MEDICAL COLLEGE LAHORE

DEPARTMENT OF PHYSIOLOGY

GRAND TEST

1st YEAR MBBS (Session 2013-14)

MULTIPLE CHOICE QUESTIONS (M...
Select Single best answer, all questions ... equal marks.

Total Marks: 50 Dated: 18-08-...

INSTRUCTIONS

1-All objective questions are to be attempted on the paper and returned to the invigilator within 50 minutes.
2-Any cutting and overwriting in objective part will not be accepted.

Q1. Total body fluid is 42 liters in normal adult man and is 60 % of the body. The fluid is distributed as:

A. One third intra cellular, one third extra cellular and remaining in blood.
B. One third intra cellular, two third extra cellular.
C. Two third intra cellular, one third extra cellular
D. One third intracellular, remaining in plasma, RBCs and intra cellular.
E. None of the above

Q2. Negative feedback mechanisms classically have:

A. Good gain
B. Less Error
C. Less Correction
D. A receptor, an afferent, a center to process the information, an efferent nerve and effectors.
E. Ability to increase the change

Q3. The gene expression includes:

A. Transcription only.
B. Posttranslational processing
C. Translation only
D. Peptide linkage only.
E. Transcription, translation and protein synthesis

Q4. Transcription refers to the process:

A. Where a mRNA is used as a template for protein production.
B. Where a DNA sequence is copied into RNA for the purpose of gene expression.
C. Where DNA wraps around histones to form a nucleosome.
D. Of replication of DNA before mitosis.
E. Of replication before meiosis

Q5. Which of the following transport mechanisms is not rate-limited by an intrinsic V_{max}?

A. Simple diffusion through protein channels
B. Facilitated diffusion via carrier proteins
C. Primary active transport via carrier proteins
D. Secondary co-transport
E. Secondary counter-transport

Q6. Most of plasma proteins are synthesized in liver except:

A. Albumin
B. Fibrinogen
C. Globulin
D. Gama globulin
E. Prothrombin

Q7. Plasma colloid osmotic pressure regulation is an important function of plasma proteins. The protein most responsible for this function is:

A. Fibrinogen
B. Albumin
C. Alpha globulin
D. Transferrin
E. Immunoglobulin

Q8. Hemoglobin A2 is the most abundant type of normal hemoglobin present in an adult. It is formed of:

A. 2 alpha 2 beta chains
B. 2 alpha 2 gamma chains
C. 2 alpha 2 delta chains
D. 2 beta 2 delta chains
E. 4 gamma chains

Q9. Before the development of a person's own defence system the infant body has to rely upon the antibodies of maternal origin which is known as:

A. Active acquired immunity
B. Passive adaptive immunity
C. Active adaptive immunity
D. Artificial acquired immunity
E. Innate immunity

Q10. Lymphocytes responsible for Cell Mediated Immunity are processed in:

A. Bone Marrow
B. Blood vessels
C. Spleen
D. Thymus
E. Liver

Third heart sound → Rapid inflow

Q

Which of following events is associated with the 1st heart sound?

A. Closing of Av valves
B. Closing of pulmonary valves
C. Opening of aortin valves
D. Closing of aortin & pulmonary valve
E. None of the above

Q

What is the RMP of SA Node?

A. -55 mv
B. -60 mv
C. -50 mv
D. -75 mv
E. -90 mv

Q

What are the effects of Ps stimulation on heart?

A. Decrease in heart rate
B. Decrease in heart contractility
C. Decrease in conduction velocity
D. Decrease in Na+ entry
E. All of the above

Q

Effects of increase in K+ in ECF include?

A. Contractility of heart
B. Flaccidity of heart muscle
C. Block of cardiac conduction
D. Abnormal rhythm and weak vessels
E. All of the above

Q

What is the normal duration of PR interval?

A. 0.16 sec
B. 0.15 sec
C. 0.2 sec
D. 0.35 sec
E. 0.11 sec

Q

Regarding ventricular fibrillation, which of the following is incorrect?

A. It is one of the most serious cardiac arrthmya
B. Unconscious occur within 4 – 5 sec
C. Ventricular pumping efficiency decreases
D. Tissue death begin to occur within few seconds
E. Tissued death begin to occur within few minutes

Q

Cardiac muscle acts as syncytium is because of:

A. Presence of interrelated disc
B. Cell membrane are closely adhere to each other
C. Presence of Ca+ channels
D. Presence of gap junctions
E. Both A and D

Q

Which of following events occur at the end of ventricular ejection?

A. Pulmonary valves closes
B. Av valves open
C. Av valves close
D. Aortum valves open
E. Pulmonary valves open

Q

What is the normal total delay of cardiac impulse in the Av node and Av bundle?

A. 0.16 seconds
B. 0.15 seconds
C. 3 seconds
D. 0.13 seconds
E. 0.12 seconds

Q

Action potential in cardiac muscle caused by?

A. Opening of Na+ channels
B. Opening of K+ channels
C. Opening of Ca+ channels
D. Opening of fast Na+ and slow Ca+ channels
E. Opening of Na+ K+ channels

Q

Is heart muscle atria acts as a primer pump because?

A. 80% of blood flows directly from atria to ventricle
B. Atrial contraction usually causes an additional 20% blood to ventricle
C. It increases ventricular pumping activity
D. It has the capability of pumping 300 – 400% more blood
E. All of the above

Q

What will happen during Isometric ventricular contraction?

A. A-V closes
B. A-V open
C. Pulmonary valve closes
D. Atrial valve closes
E. Pulmonary valve open

16. Which are the most abundant of all the cells of the blood

a. Lymphocytes
b. Neutrophils
c. Monocytes
d. Platelets
e. Red blood cells

17. A patient of leukemia in his peripheral blood film will show

a- Increased numbers of abnormal white blood cells
b- Decreased no of platelets
c- Decreased no of RBCs
d- bizarre and undifferentiated WBCs
e- All of the above

18. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing .This is an example of

a-Innate Immunity
b-Passive immunity
C-Acquired active immunity
D-Ready made immunity
E-None of above

19. The preprocessing of T lymphocytes during embryonic life takes place in following organs

a-Kidney
b-Liver
c-bone marrow
d-Thymus
e-Lymph node

Following is a source of innate immunity in body

a-Vaccination
b-Monocyte macrophage system
c-Cell mediated immunity
d-Humoral immunity
e-All of the above

Q1. A. Define Erythropoises (1+2+2)

B. Enumeate the stages of Erythropoises

C. Describe briefly the regulation of Erythropoises

Q2: A.Define anemia.Give classification of anemias.

B. Compare the iron deficiency anemia with megaloblastic anemia. (2+3 marks)

Q10-A 24 year old African American man comes to the emergency room 3 hours after the onset of severe back and chest pain which started when he was climbing up a mountain. He had an episode of [illegible] symptoms five years ago. His value are Hb [illegible] gm/dl, [illegible]

a. Acute blood loss
b. Sickle cell anemia
c. Anemia of chronic disease
d. End stage kidney disease
e. Chronic blood loss

11.The protein responsible for iron transport in plasma is

a. α 1-anti trypsin
b. Ferritin
c. Apo-transferrin
d. Apo-ferritin
e. Ceruloplasmin

12.The following cell is devoid of the hemoglobin

a. Erythrocyte
b. Reticulocyte
c. Intermediate normoblast
d. Late normoblast
e. Pronormoblast

13. Maturation of erythroblasts involves

a. Increase in size of cell
b. Condensation of chromosomes in nucleus
c. Accumulation of hemoglobin
d. Pyknosis of nucleus
e. Breakage of cell membrane

14. The oxygen and carbon dioxide exchange in RBCs is maximum with the following configuration of red cell

a. Spherical
b. Oval
c. Triangular
d. Rectangular
e. Biconcave

15. In an adult human the red cells are formed continuously in the bone marrow of the

a. Sesamoid bones
b. Shafts of long bones
c. Lower ends of the long bones
d. Membranous bones
e. Phalangeal bones

Increased numbers of abnormal white blood cells
Decreased no of platelets
Decreased no of RBCs
Bizarre and undifferentiated WBCs
All of the above

Q18. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing. This is an example of:

Innate immunity
Passive immunity
Acquired active immunity
Readymade immunity
None of the above

Q19. The preprocessing of T lymphocytes during embryonic life takes place in following organs:

Kidney
Liver
Bone marrow
Thymus
Lymph node

Q20. Following is a source of innate immunity in body:

Vaccination
Monocyte macrophage system
Cell mediated immunity
Humoral immunity
All of the above

The percentage of reticulocytes in the blood is
A. 10%
B. 8%
C. 1%
D. 3%
E. 20%

Q2. Which of the following is the function of plasma proteins?
A. Contribute towards viscosity of blood.
B. Behave as antibodies
C. Prevent bleeding.
D. Responsible for colloid osmotic pressure.
E. All of the above

Q3. In an adult human the red cells are formed continuously in the bone marrow of the:
A. Sesamoid bones
B. Shafts of long bones
C. Lower ends of the long bones
D. **Membranous bones**
E. Phalangeal bones

Q4. Plasma is different from Serum in that
A. All Plasma proteins are absent in Serum.
B. Only clotting factors (proteins) are absent in the serum.
C. **Fibrinogen is present in the serum.**
D. All of the above
E. None of the above

Q5. Blueness of the polycythemic person is because of increase of
A. Myoglobin
B. Deoxygenated Hb
C. Oxygenated Hb
D. Reduced Hb
E. Carbonated Hb

Q6. 10 years old maryam is suffering from Chronic Microcytic hypo chromic anemia. The lab investigation will indicate:
A. Increased serum Ferritin levels
B. **Increased serum iron binding capacity**
C. Decreased serum Transferrin levels
D. Both B and C are true
E. None of the above

Q7. Which of the following applies to the AIDS patients?
A. They are able to generate a normal antibody response
B. They have increased helper T cells
C. They have increased secretion of interleukins
D. **They have decreased helper T cells**
E. None of the above

AIDS patients have decreased T cells

Q8. Regarding pre-processing of B-Lymphocytes in fetal life, which of the following statement is correct?
A. Liver
B. Bone marrow
C. Both A and B
D. Thymus
E. **Both A and B**

Q9. All of the following are true regarding white blood cells EXCEPT:
A. Basophils are mediators of hypersensitivity reactions.
B. Monocytes migrate into tissues and form macrophages
C. B Lymphocytes change into plasma cells to secrete immunoglobulin
D. **Eiosinophils are markedly decreased in number in tissues and blood in allergic reactions**
E. Neutrophils are increased in acute bacterial infections.

Q10. In the developing erythrocyte which are the organelle involved in Hemoglobin synthesis
A. Golgi apparatus
B. Mitochondria
C. Ribosomes
D. Endoplasmic reticulum
E. **Both B and D**

Q11. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing. This is an example of:
A. Innate immunity
B. Passive immunity
C. Acquired active immunity
D. Readymade immunity
E. None of the above

Q12. The adult hemoglobin is different from the fetal hemoglobin in that
A. It has more number of amino acids than fetal hemoglobin.
B. Carries more amount of oxygen than fetal hemoglobin.
C. **Adult hemoglobin consists 2alpha and 2beta chains while fetal hemoglobin has 2alpha and 2 gamma chains**
D. Adult hemoglobin is formed in the liver while fetal hemoglobin is formed in the red bone marrow only.
E. All of the above

A. Basophil
B. Neutrophil
C. Eosinophil
D. Lymphocyte
E. Monocyte

Q14.Regarding bilirubin

A. Is formed after degradation of red blood cells
B. Free bilirubin or insoluble bilirubin combines with albumin in the blood
C. The soluble bilirubin or conjugated bilirubin is formed in the liver
D. It changes in to stercobilin which gives colour to feces
E. All of the above

Q15.Regarding regulation of erythrocytes in the blood, the RBC count decreases in

A. Intrauterine life in fetus
B. At high altitude
C. Polycythemia
D. Chronic renal failure
E. Lung diseases leading to decreased oxygenation Of blood

Q16. In beta thalassemia there is reduced production of the following globin chain

A. Alpha
B. Zeta
C. Beta
D. Epsilon
E. Gamma

Q17. What causes the release of histamine in an allergic reaction?

A. Binding of IgM to basophils
B. Release of histamine by helper T cells
C. Free radical stimulation of endothelial cells
D. Binding of allergen to IgE attached basophils
E. All of the above

Q18.The antigen presenting cells include

A. Macrophages
B. Dendritic cells
C. B-lymphocytes
D. All A, B, C
E. Reticulocytes

A. Stimulation of Growth and Proliferation of Cytotoxic T Cells and Suppressor T Cells
B. Stimulation of B-Cell Growth and Differentiation to Form Plasma Cells and Antibodies
C. Both A and B
D. Acivation of platelet-activating factors
E. Activation of the Macrophage Monocyte

Q20.Which of the following are involved in killing mechanisms of bacteria by neutrophils

A. Lysozymes
B. Lactoferrin
C. Myeloperoxidase
D. Hydrogen peroxidase
E. Both C and D

Q21. During an inflammatory response, which is the best correct order for cellular events?

A. Infiltration of monocytes from blood, increased production of neutrophils, activation of tissue macrophages, infiltration of neutrophils from blood
B. Activation of tissue macrophages, infiltration of neutrophils from blood, infiltration of monocytes from blood, infiltration of monocytes and neutrophils from bone marrow.
C. Increased production of neutrophils, activation of tissue macrophages, infiltration of neutrophils from blood, infiltration of monocytes from blood
D. Infiltration of neutrophils from blood, activation of tissue macrophages, infiltration of monocytes from blood, increased production of neutrophils
E. None of the above

...d 2

...h of the following statements regarding ... is true?

...are formed in the lymphoid tissue and bone marrow.

B. **Have no nucleus but can contract due to the presence of contractile proteins.**

C. Do not show adhesiveness while coming in contact with collagen

D. has a life span of 120 days

E. Prevent intravascular coagulation if endothelium gets injured.

Q2. **Which of the following factors is important in platelet aggregation?**

A. ADP
B. Contact with collagen
C. Binding of platelet with fibrin meshwork
D. **A,B and C are true**
E. Calcium ions

Q3.**The initial hemostatic plug contains**

A. Thrombin
B. Fibrin entirely
C. Protein C and S
D. **Aggregated platelets and other blood cells**
E. Plasminogen activator

Q4. **The blood in the vessels does not clot in a normal person because:**

A. Thrombin has positive feedback effect on plasminogen
B. **Vascular endothelium is smooth and coated with** glycocalyx
C. Both A and B are true
D. Contact of the blood with extra vascular tissue.
E. All of the above

Q5. **Following coagulation factors are vitamin K dependent**

A. IX,XI
B. II, VII &XII
C. VII& XI
D. **II, VII. &X**
E. XI&XII

Q6.**A 9 years old boy bruises easily & has bleeding gums on several occasions for last 8 months A maternal uncle has a bleeding disorder. Which of the following is the most likely coagulation factor deficiency?**

A. Factor III
B. Factor VII
C. **Factor VIII**
D. Factor X
E. Factor XIII

Q7.**The most important natural anticoagulant present in the blood is**

A. Warfarin
B. **Heparin**
C. Fibrin
D. Plasminogen
E. Prothrombin

Q8.Which of the following is true regarding blood group antigens?

A. Are present on the surface of red blood cells
B. Are called agglutinogen.
C. **Both A and B**
D. Are formed by the red bone marrow.
E. All of the above

Q9.If a person blood group is O he can receive blood from:

A. A & B group
B. AB group
C. A,B,AB,O group
D. **Only O group**
E. None of the above

Q10.During cross matching of blood the compatibility is seen by reacting:

A. Recipient RBCs with donors serum
B. Donors serum with recipient serum
C. Donors RBCs with recipient RBCs
D. **Donors RBCs with recipients serum**
E. All of the above

Q11.All of the following conditions cause excessive bleeding in human beings except

A. Chronic liver disease.
B. Thrombocytopenia
C. Disseminated Intravascular Coagulation
D. Hemophilia
E. **Atherosclerosis**

Q12. Regarding the Rh positive blood group

A. Its genotype may be dd
B. Can result in severe reaction if transfused to a Rh negative person for the first time
C. **It is due to presence of D antigen on the surface of RBC**
D. Majority of the population is Rh negative
E. If a Rh +Orecieves O negative severe reaction will occur.

Q13.All of the following statements regarding Antibodies against a Rhesus positive baby in a rhesus negative mother are true except

A. develops at first trimester of pregnancy
B. Are of IgG type in nature and can cross the placenta.
C. **Leads to the breakdown of Red blood cells of the mother**
D. Can cause Kernicterus in the new-born
E. Causes no haemolytic reaction in first pregnancy.

incompatibility in subsequent pregnancy, the most appropriate measure is to give

A. Blood transfusion
B. Anti Immunoglobulin D
C. Amniocentesis
D. Corticosteroids
E. None of the above

Q15Antibodies have been formed in the disease known as "idiopathic thrombocytopenia" against:

A. Endothelium
B. Red blood cells
C. Tissue macrophages
D. Reticuloendothelial system
E. Platelets

Q16. A patient suffers from a congenital deficiency of factor XIII (fibrin-stabilizing factor). What would analysis of his blood reveal?

A. Prolonged Prothrombin time
B. Prolonged whole blood clotting time
C. Prolonged bleeding time
D. Easily breakable clot
E. None of the above.

Q17.Regarding the ABO agglutinins following is the true statament:

A. These are IgG or Ig M
B. Produced after birth
C. Maximum leve reaches at age of 10years
D. Will be absent from plasma if corresponding antigen is present on RBC surface
E. All of the above

Q18. Which of the following is correct regarding changes in the stored blood.

A. increase in the 2.3-biphosphoglycerate
B. Increased activity of sodium-potassium pump
C. Rise in the ATP levels
D. Disappearance of the platelets and granulocytes
E. No change in the clotting factors V and VIII

Q19. The complications of the thromboembolism include all of the following Except

A. Ischemic heart disease
B. Migraine
C. Pulmonary embolism
D. Transient ischemic attacks
E. Deep venous thrombosis

disease. He was operated for a Liver tr... a cadaver. Such grafting is known as:

A. Autograft
B. Isograft
C. Allograft
D. Xenograft
E. Heterograft

HEART PHYSIOLOGY

Q1.Which of the following type of ionic channels responsible for the spike potential in ventricular muscles of heart?

A. Fast calcium channels
B. Sodium leak channels
C. **Voltage gated sodium channels**
D. Slow calcium channels
E. Voltage gated potassium channels

Q2.Tetanization of heart is prevented by property of:

A. Rhythmicity
B. **Long refractory period**
C. Short refractory period
D. Conductivity
E. Chronaxie

Q3. Purkinje fibers of the heart

A. Are modified myocardial cells
B. Can conduct impulses as fast as some nerves
C. Are confined to the ventricles
D. Excites the myocardium of the interventricular region before the outer walls of the ventricles
E. **All of the above**

Q4. Vagal stimulation results in the fall of heart rate. This is due to increased permeability of sinoatrial nodal fiber membrane to:

A. Ca^{++}
B. Cl^-
C. K^+
D. Na^+
E. Na^+ and Ca^{++}

Q5.What is the resting membrane potential of the S-A nodal fibers?

A. -100 millivolts
B. -90 millivolts
C. -80 millivolts
D. **-55 millivolts**
E. -65 millivolts

Regarding bleeding from a small cut in the skin which of the following is not true.

A. Is normally diminished by local vascular response.
B. Is prolonged in thrombocytopenia.
C. May prolonged if factor VIII is absent.
D. Ceases Within 5 minutes in normal people.
E. Is likely to be greater if the skin is warm than cold

Q12. A child suffered from bee-sting, Which of the following participate in the inflammatory response?

A. IgM
B. IgG
C. Lymphocytes
D. Basophils
E. None of the above

Q13. Interleukin-2 (IL-2) is an important molecule in the immune response. What is its function?

A. It binds to and presents antigen
B. It stimulates proliferation of cytotoxic T cells
C. It kills virus-infected cells
D. It is required for proliferation of helper T cells
E. None of the above

Q14. Which of the following would most likely be used for prevention of sudden ischemic heart attack by inhibiting platelet function?

A. Herapin
B. Warfarin
C. Aspirin
D. Streptokinase
E. None of the above

Q15. Which of the following is appropriate treatment for massive pulmonary embolism?

A. Calcium
B. Vitamin K
C. Aspirin
D. Tissue plasminogen activator
E. None of the above

Q16. A 10-year-old boy with a prolonged prothrombin time (25 seconds; control, 11 to 15 seconds) is referred to a hematologist before undergoing surgery. The patient's bleeding time is normal. Which coagulation system is abnormal in this case?

A. Platelet production
B. Platelet function
C. Extrinsic pathway
D. Intrinsic pathway
E. None of the above

Q17. A 65 year old male has had a coronary artery by pass graft .A graft to the left main artery was made This patient has received:

A. Autograft
B. Homograft
C. Allograft
D. Xenograft
E. Isograft

Q18. Which of the following is a true statement?

A. In a transfusion reaction, there is agglutination of the recipient blood
B. Shutdown of the kidneys following a transfusion reaction occurs slowly
C. Transfusion of Rh-positive blood into any Rh-negative recipient for the first time will result in an immediate transfusion reaction
D. A person with type AB blood is considered to be a universal recipient
E. All of the above

Q19. During cross matching of blood the compatibility is seen by reacting:

A. Donors RBCs with recipients plasma
B. Recipient RBCs with donors plasma
C. Donors serum with recipient plasma
D. Donors RBCs with recipient RBCs
E. All of the above

Q20. A man underwent renal transplantation. Two weeks later he developed signs and symptoms of graft rejection. What is responsible for this rejection:

A. Complement factors
B. Immune complexes
C. Cytokines
D. Antigen antibody reaction
E. Cytotoxic T-lymphocytes

Graft reaction → cytotoxic T-lymphocyte

A NAHEED MEDICAL COLLEGE LAHORE

YEAR MBBS 2013-14 (Physiology)

REVISION TEST

BLOOD PHYSIOLOGY - 2

MULTIPLE CHOICE QUESTIONS (MCQs)
Total Marks: 20
Select Single best answer,
All questions carry equal marks.
Dated: 19-08-2014

INSTRUCTIONS:

1- All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2- Any cutting and overwriting in objective part will not be accepted.

Q1. Following is true regarding blood group antigens

A. Are present in plasma
B. Are called agglutinogen
C. Are enzymes in nature
D. Are formed by plasma cells
E. Are inherited as autosomal dominant

Q2. The best way to prevent Rh auto immunization in a woman who has given birth to Rh positive fetus is to give mother:

A. Blood transfusion
B. Platelet transfusion
C. Rh immunoglobulins (antibodies)
D. Steroids
E. Plasma transfusion

Q3. Regarding specific defense mechanism the following statement is correct:

A. Maturation of B-lymphocytes is determined by erythropoietin.
B. Haptens are strong antigens readily develop immunity.
C. Antigens are (large polysaccharides) initiate acquired Immunity
D. Secondary response is always of short duration.
E. All of the above

Q4. Following coagulation factors are vitamin K dependent:

A. Factor X&XI.
B. Factor VII&XI.
C. Factor II, VII, IX & X
D. Factor II, VII&XI.
E. Factor XI & XII.

Q5. Intrinsic and extrinsic mechanism both converge upon

A. Activation of Factor VII
B. Formation of tissue factor
C. Both A and B
D. Activation of Factor Xa
E. Activation of Factor V

Q6. The hypersensitivity to the toxin of poison ivy is a delayed allergic response. Which of the following cells are responsible for this response?

A. B lymphocytes
B. T lymphocytes
C. Basophils
D. Eosinophils
E. Monocytes

Q7. The rupturing of the cell membranes of the bacteria is caused by the lytic complex. Which product of the complement system is the lytic complex?

A. C5b67
B. C5b6789
C. C5b + C5a
D. C3b + C3a
E. C3b

Q8. Newborn with erythroblastosis sfetalis with blood group B positive needs transfusion of:

A. B positive blood
B. O negative blood
C. B negative blood
D. AB positive blood
E. A positive blood

Q9. Regarding immunoglobulin all of the following are true Except

A. May activate complement
B. Are gamma globulins
C. Cause precipitation with antigens
D. Cause agglutination with antigens
E. Are formed by monocyte macrophage system

Q10. A 6 year old boy bruises easily and has previously bleeding gums. The maternal grandfather also had a similar disorder. You suspect the deficiency of:

A. Prothrombin activator
B. Factor II
C. Factor VIII
D. Factor X
E. Factor XIII

All of following have limiting membrane EXCEPT
A. Golgi apparatus
B. Endoplasmic reticulum
C. Nucleus
D. Lysosomes
E. Nucleolus

Q2. Total body fluid is 42 liters in normal adult man and is 60 % of the body. The fluid is distributed as:

A. One third intra cellular, one third extra cellular and remaining in blood.
B. One third intra cellular, two third extra cellular.
C. **Two third intra cellular, one third extra cellular**
D. One third intracellular, remaining in plasma, RBCs and intra cellular.
E. None of the above

Q3. Running hundred meter race with intention to win putting more and more speed at each next running footstep is a good example of :

A. Negative feed back mechanism
B. Feed forward mechanism
C. Positive feed back mechanism
D. All of the above
E. None of the above

Q4. The gene expression includes:

A. Transcription only.
B. Posttranslational processing
C. Translation only
D. Peptide linkage only.
E. **Transcription, translation and protein synthesis**

Q5. Transcription refers to the process:

A. Where a mRNA is used as a template for protein production.
B. Where a DNA sequence is copied into RNA for the purpose of gene expression.
C. Where DNA wraps around histones to form a nucleosome.
D. Of replication of DNA before mitosis.
E. Of replication before meiosis

Q6. Which of the following transport mechanisms is not rate-limited by an intrinsic V_{max}?

A. Simple diffusion through protein channels
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D. 2 beta 2 delta chains
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A. Active acquired immunity
B. Passive adaptive immunity
C. Active adaptive immunity
D. Artificial acquired immunity
E. Innate immunity

Q10. During embryonic life the Lymphocytes responsible for Cell Mediated Immunity are processed in:

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B. Blood vessels
C. Spleen
D. Thymus
E. Liver

Q11. Which of the following lymphocytes is major regulators of almost all immune functions?

A. Cytotoxic T cells
B. Suppressor T cells
C. Helper T cells
D. T lymphocyte memory cells
E. None of the above

Q12. Formation of antibodies to provide humoral immunity is the function of:

A. T lymphocytes
B. Macrophages
C. Helper T cells
D. Cytotoxic T cells
E. Plasma cells

13. Prothrombin level falls in the blood due to lack of:

A. Vitamin B12
B. Vitamin K
C. Phospholipids
D. Platelets
E. Sodium

Q14. Clotting of blood by extrinsic pathway is triggered by:

A. Fibrinogen activation
B. Tissue trauma (tissue thromboplastin (F-III))
C. Hageman factor (F-XII)
D. Exposed collagen
E. Blood trauma

Q15. If a person blood group is O he can receive blood from:

A. A & B group
B. AB group
C. A,B,AB,O group
D. Only O group
E. None of the above

Q16. What occurs following presentation of an antigen by an infected cell?

A. Generation of antigen antibody complex
B. Activation of cytotoxic T-cells
C. Increase in phagocytosis
D. Release of histamine by mast cells
E. Activation of helper T-cells

Q17. If Rh +ve person receives Rh –ve blood there would be:

A. Sensitization of recepient immune system
B. RBCs hemolysis.
C. Anaphylaxis
D. No risk of complication
E. Acute kidney shutdown

Q18. What causes the release of histamine in an allergic reaction?

A. Binding of IgM to basophils.
B. Binding of IgE to mast cells.
C. Release of histamine by helper T cells.
D. Free radical stimulation of endothelial cells
E. Release of histamine by macrophages

Q19. Chronaxie is defined as:

A. Double the rheobasic strength
B. Minimum time required to excite the fiber when strength of the current used is double the rheobasic strength.
C. Minimum time required to excite the tissue when strength of the current is minimum.
D. Threshold voltage
E. Maximum strength of stimulus

Q20. The myelin sheath to the nerve fibers in the central nervous system is provided by:

A. Schwann cells
B. Astrocytes
C. Microgliocytes
D. Oligodendrocytes
E. Fibroblast

21. The RMP donated by the Na K pump to excitable cell membrane is:

A. -90 mv
B. +4mv
C. -4mv
D. +94 mv
E. -70m

Q22. Calcium ions have the following role in skeletal muscle contraction:

A. To uncover the active sites on actin filaments
B. To combine with troponin C
C. To combine with tropomyosin
D. To make a bond with titin
E. To cause narrowing of I band

Q23. During skeletal muscle contraction the myosin head walks along the actin filament resulting in sliding of actin filament on myosin. This causes:

A. Shortening of A band
B. Shortening of I band
C. Lengthening of sarcomere
D. Lengthening of H zone
E. Moving apart of Z lines

Q24. The actin filament consists of:

A. F actin strand
B. F actin strand, troponin
C. Tropomyosin, troponin, F actin
D. Tropomyosin, troponin, F actin,myosin
E. Titin, myosin, F actin

Q25. End plate potential is:

A. Local potential at post synaptic membrane of a neuron
B. Action potential at post synaptic muscle membrane.

Q10-A 24 year old African American man comes to the emergency room 3 hours after the onset of severe back and chest pain which started when he was climbing up a mountain. He had an episode of same symptoms five years ago. His values are Hb: 11g/dL, TLC: 12,000/mm^3, Reticulocyte count: 25%. What is the diagnosis of this patient?

a. Acute blood loss
b. Sickle cell anemia
c. Anemia of chronic disease
d. End stage kidney disease
e. Chronic blood loss

11. The protein responsible for iron transport in plasma is

a. α 1-anti trypsin
b. Ferritin
c. Apo-transferrin
d. Apo-ferritin
e. Ceruloplasmin

12. The following cell is devoid of the hemoglobin

a. Erythrocyte
b. Reticulocyte
c. Intermediate normoblast
d. Late normoblast
e. Pronormoblast

13. Maturation of erythroblasts involves

a. Increase in size of cell
b. Condensation of chromosomes in nucleus
c. Accumulation of hemoglobin
d. Pyknosis of nucleus
e. Breakage of cell membrane

14. The oxygen and carbon dioxide exchange in RBCs is maximum with the following configuration of red cell

a. Spherical
b. Oval
c. Triangular
d. Rectangular
e. Biconcave

15. In an adult human the red cells are formed continuously in the bone marrow of the

a. Sesamoid bones
b. Shafts of long bones
c. Lower ends of the long bones
d. Membranous bones
e. Phalangeal bones

16. Which are the most abundant of all the cells of the blood

a. Lymphocytes
b. Neutrophils
c. Monocytes
d. Platelets
e. Red blood cells

17. A patient of leukemia in his peripheral blood film will show

a- Increased numbers of abnormal white blood cells
b- Decreased no of platelets
c- Decreased no of RBCs
d- bizarre and undifferentiated WBCs
e- All of the above

18. During vaccination we give repeated doses of attenuated antigens which are antigenic but not disease producing .This is an example of

a-Innate immunity
b-Passive immunity
C-Acquired active immunity
D-Ready made immunity
E-None of above

19. The preprocessing of T lymphocytes during embryonic life takes place in following organs

a-Kidney
b-Liver
c-bone marrow
d-Thymus
e-Lymph node

Following is a source of innate immunity in body

a-Vaccination
b-Monocyte macrophage system
c-Cell mediated immunity
d-Humoral immunity
e-All of the above

Q1. A. Define Erythropoises

(1+2+2)

B. Enumeate the stages of Erythropoises

C. Describe briefly the regulation of Erythropoises

Q2: A.Define anemia.Give classification of anemias.

B. Compare the iron deficiency anemia with megaloblastic anemia. (2+3 marks)

6. In a patient with normocytic normochromic anaemia, which of the following is the earliest laboratory sign indicating iron deficiency?

A. Decreased serum iron and increased serum transferrin
B. Decreased serum transferrin and increased transferrin saturation
C. Increased serum transferrin and decreased transferrin saturation
D. Decreased serum ferritin and depletion of bone marrow iron store *
E. Increased serum total iron levels and depletion of transferrin levels

7. What would happen to red blood cells if the haem group were removed from haemoglobin?

A. Red blood cells would not be able to reproduce.
B. Red blood cells would not be able to bind oxygen*.
C. White blood cells would not be able to reproduce.
D. Blood clot formation would be inhibited.
E. Platelets plug will not be formed

8. Red cells have no mitochondria, therefore can not use:

A. Water
B. Proteins
C. Fats
D. NADH
E. Oxygen

9. The haemoglobin in the blood contains iron in the form of:

A. Soluble
B. Non-soluble
C. Non-chelated
D. Ferric state
E. Ferrous state

10. Regarding hemosiderin which statement is true:

A. Is present in the gastro intestinal lining
B. Is soluble form of storage iron
C. Is the insoluble form of stored iron*
D. Is decreased in iron overload
E. Can be seen only with electron microscope

11. Adult Hb (HbA) is different from fetal haemoglobin in:

A. It contains two alpha and two beta chains*
B. It contains two alpha and two delta chains
C. It contains two alpha and two gamma chains
D. It contains two beta and two delta chains
E. It contains two gamma and two delta chains

MCQs

1. A committed stem cell that produces erythrocytes is known as:

A. Pluripotent Hemopiotic Stem Cell
B. CFU-E
C. CFU-GM
D. CFU-M
E. Pro-Erythroblast

2. The percentage of reticulocytes in the peripheral blood stream is:

A. 10%
B. 8%
C. 1%
D. 1%
E. 20%

3. The following cell is devoid of the hemoglobin:

A. Erythrocyte
B. Reticulocyte
C. Intermediate normoblast
D. Late normoblast
E. Pronormoblast

4. In an adult human, the red blood cells, at the end of their life-span disintegrate mainly in:

A. lymph nodes
B. Liver
C. Vessels
D. Lungs
E. Spleen

5. The actively phagocytic cell in the blood stream is:

A. Basophil
B. Neutrophil
C. Eosinophil
D. Lymphocyte
E. Monocyte

9/3/2014

Q1. All of following have limiting membrane EXCEPT
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...fect of inflammation?

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B. Albumin
C. Fibrinogen
D. γ Globulin
E. α Globulin

...2. Serum differs from plasma in ...king:

A. Albumin
B. Fibrinogen
C. Globulin
D. Ferritin
E. Apoferritin

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E. Hemochromatin

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B. End stage renal disease
C. Polycythemia vera
D. Aplastic anemia
E. Leukemia

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B. Sickle cell anemia
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E. Chronic blood loss

...generating a normal antibody response.
B. They have increased helper T cells.
C. They have increased secretions of inter-leukins.
D. They have decreased helper T cells.
E. They have decreased red blood cells.

Q13. The actively phagocytic cell in the blood stream is:

A. Basophil
B. Neutrophil
C. Eosinophil
D. Lymphocyte
E. Monocyte

Q14. Combination of monocyte's mobile macrophages, fixed tissue macrophage, and a few specialized endothelial cells in the bone marrow, spleen and lymph nodes is called:

A. Complement system
B. Coagulation system
C. Immune system
D. Monocyte macrophage system
E. Lymphatic system

Q15. What happens following the presentation of an antigen by a macrophage?

A. Direct generation of antibodies
B. Activation of cytotoxic T cells
C. Increase in phagocytosis
D. Activation of helper T cells.
E. Activation of platelets

Q16. Bluish tint of the polycythemia person is because of excess of:

A. Myoglobin
B. Deoxygenated Hb
C. Oxygenated Hb
D. Reduced Hb
E. Sulphated Hb

Question no 18

- **Fast action potential is seen in,**
- A) SA node
- B) AV node
- C) Ventricular muscle
- D) A and B
- E) B and C

Question no 19

Resting cardiac muscle is most permeable to,

a) Na
b) Ca
c) K
d) Na and Ca
e) Ca and K

Question no 20

Hyperkalemia causes,

- A) Increase in resting membrane potential in cardiac muscle fiber.
- B) As the membrane potential increases in cardiac muscle, intensity of action potential decreases.
- C) The heart becomes flaccid and dilated.
- D) Heart contractility becomes more vigorous.
- E) Increases the conduction of cardiac impulse from atria to ventricles through the AV bundle.

Essay questions

Question no 1

- A) Draw and label cardiac impulse conduction from SA node to Ventricular muscle by calculating the time and delays cardiac impulse takes to depolarize cardiac muscle (3 marks)
- B) Draw and label SA nodal action potential emphasizing the effect of sympathetic and parasympathetic stimulation on SA nodal action potential. (2 marks)

Question no 2

- **A) Enumerate myocardium properties (2 marks)**
- **B) Explain strokes Adam syndrome (3 marks)**

Question no 3

- A. Draw and label cardiac action potential by showing absolute and relative refractory periods? (3marks)
- B. Explain the ionic changes responsible for all the phases in cardiac action potential? (2 marks)

Question no 4

- A) Give the differences between myocardial and pacemaker action potential, by mentioning phases and ionic channels responsible for them? (3 marks)
- B) Give the excitation contraction coupling in heart? (2 marks)

Question no 5

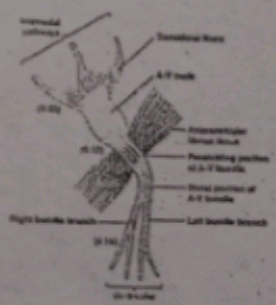
- Write short notes on (5 marks)
- A) Cardiac syncitium
- B) Frank starling mechanism
- C) Ectopic pacemaker
- D) Refractory period
- E) Effect of temperature on cardiac contractility

Key

Key

1 C	9 D	17 D
2 E	10 C	18 C
3 E	11 C	19 C
4 E	12 E	20 C
5 D	13 D	
6 D	14 B	
7 A	15 C	
8 B	16 C	

Q 1—a)



Varicose veins

- **Varicose veins** are veins that have become enlarged and tortuous (twisted).
- Veins have leaflet valves to prevent blood from flowing backwards.
- Leg muscles pump the veins to return blood to the heart (the calf muscle pump mechanism), against the effects of gravity.
- When veins become varicose, the leaflets of the valves no longer meet properly, and the valves do not work (valvular incompetence).
- This allows blood to flow backwards and they enlarge even more.
- Varicose veins are most common in the superficial veins of the legs, which are subject to high pressure when standing.

Pulsus paradoxus

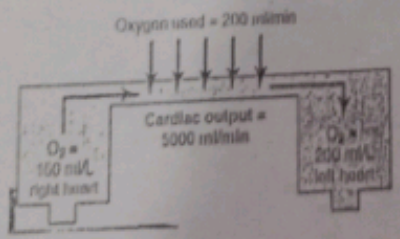
- Abnormally large decrease in systolic blood pressure and pulse wave amplitude during inspiration.

Compliance

- Total amount of blood that can be stored in the given portion of circulation by change in pressure of 1 mmHg.

Fick's principle

Cardiac Output =



9/3/2015

Pre-test

HEART PHYSIOLOGY

Question no 1

- The cardiac muscle of the heart,
- A) Does not contract unless stimulated by the nervous system.
- B) Commonly undergoes prolonged tetanic contractions.
- C) Never undergoes tetanic contractions.
- D) Contains one functional Syncytium
- E) Cardiac muscle has typical *myofibrils* that contain actin and myosin filaments different to those found in skeletal muscle

Question no 2

- **Parasympathetic stimulation decreases the heart rate by the following mechanism,**
- A) Release of acetylcholine.
- B) Acetylcholine acting on cholinergic muscuranic receptors in SA node.
- C) It increases potassium efflux more than usual.
- D) Site of action is mainly on SA node and AV node.
- E) All of above.

Question no 3

- **Stimulation of the vagus nerve,**
- A)decreases the inhibitory mechanisms of the heart.
- B) increases heart rate.
- C) has no effect on the heart.
- D) increases conductivity of the heart tissue.
- E) decreases excitability of the heart.

Question no 4

Regarding SA nodal action potential which is NOT true,

- A) At the end of repolarization, If (funny current) ion channels open that conduct slow, inward Na^+ currents responsible for pre-potential.
- B) As the membrane potential reaches about -50 mV, transient or T-type Ca^{++}channel responsible for pre-potential.
- C) When the membrane depolarizes to about -40 mV,long or L-type Ca^{++} channels responsible for phase 0, depolarization.
- D) Repolarization occurs (Phase 3) as K^+ channels open.
- E) Depolarizing current is carried into the cell primarily by relatively slow Na^+ currents.

Question no 5

- **Automaticity is best developed in the cells of SA node because SA nodal tissue has,**
- A) Na leak channels,
- B) Slow calcium channels.
- C)Voltage gated fast Na channels.
- D) A and B
- E) B and C

AZRA NAHEED MEDICAL COLLEGE LAHORE

Department of Physiology

1ST YEAR MBBS 2013-14

System Test: CIRCULATORY SYSTEM

MULTIPLE CHOICE QUESTIONS (MCQS) Total Marks: 20, Time = 20mins
Select Single best answer, all questions carry equal marks.

ROLL #:_____ DATE: 14-05-

INSTRUCTIONS

1-All objective questions are to be attempted on the paper an returned to the invigilator within 20 mins
2-Any cutting and overwriting in objective part will not be accepted

1. **Which of the following increases the plateau level of cardiac output curve?**
   - A. Myocarditis
   - B. Cardiac temponade
   - C. Myocardial infarction
   - D. Mitral stenosis
   - E. **Decreased parasympathetic stimulation of heart**

2. **Total peripheral resistance increases in which of the following?**
   - A. Anemia
   - B. Exercise
   - C. Sympathetic stimulation
   - D. Arteriovenous fistula
   - E. **None of the above**

3. **Regarding systemic vascular resistance, choose the best statement?**
   - A. Is less than the pulmonary vascular resistance
   - B. Directly proportional to the blood flow of an organ
   - C. Is inversely proportional to the viscosity of blood
   - D. **Mainly effects the diastolic blood pressure**
   - E. Is not effected by the sympathetic stimulation

4. **Which of the following would be expected to occur during central nervous system ischemic response?**
   - A. Decreased heart rate
   - B. Increased parasympathetic stimulation
   - C. Decreased total peripheral resistance
   - D. **Enhanced sympathetic stimulation and generalized vasoconstriction**
   - E. Decreased arterial blood pressure

5. **In which of the following conditions there will be a decreased cardiac output?**
   - A. Hyperthyroidism
   - B. Beriberi
   - C. Atrioventricular fistula
   - D. Anemia
   - E. **Acute myocardial infarction** ✓

6. **Right ventricular failure leads to:**
   - A. Pulmonary edema
   - B. Reduced systemic arterial pressure
   - C. Decreased concentration of aldosterone in the blood
   - D. **Edema of feet**
   - E. Edema of face

7. **Which of the following does not cause hypo effective heart?**
   - A. Inhibition of sympathetic nervous excitation heart
   - B. Coronary artery blockage
   - C. Valvular heart disease
   - D. Cardiac hypoxia
   - E. **Sympathetic stimulation**

8. **Which is not true regarding second heart sound?**
   - A. **Duration of second heart sound is about 0.1 second**
   - B. Vibration produced by sudden closure of semilunar valves
   - C. Dub is indicative for second heart sound
   - D. Second heart sound duration is more than first heart sound
   - E. Audible with the stethoscope

9. **Mean arterial Pressure is?**
   - A. Systolic blood pressure+ Diastolic blood pressure / 2
   - B. It's value is nearer to systolic blood pressure than diastolic blood pressure
   - C. 50% of sum of Systolic and Diastolic blood pressure
   - D. Systolic blood pressure – Diastolic blood pressure
   - E. **1/3 Pulse pressure+ Diastolic blood pressure**

10. **Which of the following structures are not innervated?**
    - A. Arterioles
    - B. Post capillary venules
    - C. Venuoles
    - D. **Pre-capillary sphincters**
    - E. Arteries

11. Both the arterial and venous pressures come to equilibrium when all flow in the systemic circulation ceases at a pressure of 7mmHg and this is called?

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

12. Which of the following parts of circulation has highest compliance?

A. Capillaries
B. Large arteries
C. Veins
D. Aorta
E. Small arteries

13. If coronary artery diameter is reduced by 50% expected reduction in blood flow would be how many times less?

A. 4 times
B. 12 times
C. 64times
D. 16 times
E. 8 times

14. Which statement is correct regarding effects of hypoxia in pulmonary circulation?

A. It causes vasodilatation
B. It causes vasoconstriction
C. Increases pulmonary blood flow
D. Have no effect on pulmonary blood flow
E. None of the above

15. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

16. The compensatory mechanisms in non-progressive shock include all of the following except:

A. Arteriolar constriction
B. Increased heart rate
C. Sympathetic over activity
D. Sludging of small blood vessels
E. Increased level of angiotensin 2

17. Generalized cellular deterioration in the following in irreversible shock except

A. Failure of Na K pump
B. Depressed mitochondrial activity
C. Increased transcription & translation
D. Decreased glucose uptake
E. Breaking of liposomal membrane

18. Regarding Starling forces, which of following tends to decrease capillary filtrat rate?

A. Capillary hydrostatic pressure
B. Interstitial hydrostatic pressure
C. Plasma colloidal osmotic pressure
D. Lymphatic pump activity
E. Interstitial colloidal osmotic pressure

19. 35% loss of total blood volume leads to:

A. Compensated shock
B. Progressive shock
C. Irreversible shock
D. No effect on cardiac output & BP
E. None of the above

20. Cardiogenic shock may be due to the follow reasons except:

A. Severe heart valve dysfunction
B. Heart arrhythmias
C. Hypothyroidism
D. Septicemia
E. Myocardial infarction

ch of the following structures has the slowest
e of conduction of the cardiac action potential?
F. Atrial muscle
G. Anterior intermodal pathway
H. Atrioventricular bundle fibers
I. Purkinje fibers
J. Ventricular muscle

Tetanization of heart is prevented by property of.
A) Conductivity
B) Excitability
C) Rhythmicity
D) Long refractory period
E) Short refractory period

Cause of refractory period in ventricular muscle is.
A) Slow conduction of action potential.
B) Slow closure of voltage gated potassium channels.
C) Closure of inactivation gates of sodium channels till RMP.
D) Calcium influx in plateau phase.

Important histological features in cardiac muscle tissue responsible for excitation-contraction coupling is,
A) Markedly developed ER and triads
B) Well developed T-tubules (More length and volume).
C) Well developed Ryanodine receptors.
D) C and D
E) Both B and C

Automaticity is best developed in the cells of SA node because SA nodal tissue has.
A) Na leak channels.
B) Slow calcium channels.
C) Voltage gated fast Na channels.
D) A and B
E) B and C

Hyperkalemia causes,

COLLEGE LAHORE

Department of Physiology

1st YEAR MBBS 2012-17

Revision Test: Circulation

MULTIPLE CHOICE QUESTIONS (MCQS)

Marks 20, Time =20mins

Select Single best answer, all questions carry e qu marks.

DATED: 25-03-1

INSTRUCTIONS

1-All objective questions are to be attempted on the paper and returned to th nvigilator within 20 minutes..

2-Any cutting and overwriting in objective part will not be accepted.

Q1. Mean arterial Pressure is?

A. Systolic blood pressure+ Diastolic blood pressure / 2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic blood pressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure+ Diastolic blood pressure

Q2. In which of the following conditions there will be a decreased cardiac output?

A. Hyperthyroidism
B. Beriberi
C. Atrioventricular fistula
D. Anemia
E. Acute myocardial infarction

Q3. Right ventricular failure leads to

A. Pulmonary edema
B. Reduced systemic arterial pressure
C. Decreased concentration of aldosterone in the blood
D. Edema of feet
E. Edema of face

Q4. Stimulation of baroreceptors leads to

A. Increase in blood pressure
B. Increase in heart rate
C. Decrease in blood pressure and decrease in heart rate
D. Increase in blood pressure and decrease in heart rate
E. Increase in blood pressure and increase in heart rate

Q5. Vessels which are not under sympathetic tone are

A. Arterioles
B. Capillaries
C. Veins
D. Small arteries
E. Large arteries

Q6.following conditions may result from the long standing Hypertension except:

A. Renal failure
B. Cerebral haemorrhage
C. Retinal haemorrhage
D. Myocardial infarction
E. Hepatitis

Q7. Which of the following sets of differences best describes the hemodynamics of the pulmonary circulation when compared with systemic circulation?

	(Flow)	(Resistance)	(Arterial Pressure)
A.	Higher	Higher	Higher
B.	Higher	Lower	Lower
C.	Lower	Higher	Lower
D.	Lower	Lower	Lower
E.	Same	Lower	Lower

Q8. Both the arterial and venous pressures come to equilibrium when all flow in the systemic circulation ceases at a pressure of 7mmHg and this is called"

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

Q9. Immediately after an acute coronary occlusion blood flow ceases in the coronary vessels beyond the occlusion except for small amounts of collateral flow from surrounding vessels and results in ischemic necrosis of heart muscles. This phenomenon is called:

A. Angina pectoris
B. Atrial fibrillation
C. Cardiac tamponade
D. Myocardial infarction
E. Pericarditis

Q10. Coronary blood flow increases during:

A. Systole
B. Diastole
C. Repolarization of ventricle
D. Depolarization of ventricle
E. None of the above

LAHORE

PHYSIOLOGY DEPARTMENT
1st YEAR MBBS 2017-2018

Roll NO 51

TEST: 3rd TERM
Date: 13-08-18

Humain

MULTIPLE CHOICE QUESTIONS (MCQS)
Total Marks 50,
Time = 50 mins
Select single best answer, all questions carry equal marks.

NAME: M. Humain ROLL NO: 51

INSTRUCTIONS

1-All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins
2-Any cutting and overwriting in objective part will not be accepted.

1- **A 20 year old medical student participates in a 100 meter race on her college sports week. Which of the following muscles she will use for expiration?**
A. External intercostals & diapharagm
B. Internal intercostals & rectus abdominus
C. Sternocliedomastoid
D. Anterior serrate
E. Diaphragm only

2- **A 45 year old woman has an expiratory reserve volume (ERV) of 1100ml, inspiratory reserve volume (IRV) of 3000ml, tidal volume is 600ml and total lung capacity is 6000ml. What is his residual volume?**
A. 1300ml
B. 1200ml
C. 1000ml
D. 1400ml
E. Residual volume cannot be calculated

3- **The extra volume of air that can be inspired over & above the normal tidal volume is called**
A. Expiratory reserve volume
B. Inspiratory capacity
C. Vital capacity
D. Inspiratory reserve volume
E. Functional residual capacity

4- **In which organ blood vessels, hypoxia causes vasoconstriction**
A. Heart
B. Lungs
C. Brain
D. Muscle
E. Skin

5- **Which of the following statement is correct regarding the net rate of diffusion of gases in fluids?**
A. The rate of diffusion decreases with the pressure difference
B. It decreases with the solubility of gas in the fluid
C. Is directly proportional to the cross- sectional area of the diffusion pathway
D. Increases with the distance through which gas must diffuse
E. Increases with the increase in the molecular weight of the gas molecules

6- **A 17 year old boy presents in the outpatient department with a lump in the neck area. Biopsy was done which showed carcinoma of parotid gland. During the surgery of parotid gland there was injury to the glossopharangeal nerve. Which of the following respiratory reflex will be impaired?**
A. Aortic chemoreceptor reflex
B. Carotid chemoreceptor reflex
C. Baroreceptor reflex
D. Both aortic and carotid chemoreceptor reflexes
E. Respiratory reflexes are not affected by damage to the glossopharangeal nerve.

7- **The percentage of blood that gives up its oxygen as it passes through the tissue capillaries is called "Utilization Coefficient". What is its value during strenuous exercise?**
A. 75%-85%
B. 40%-50%
C. 25%
D. 85%-100%
E. 50%75%

8- **In a resting state, what is the amount of O2 released from Hemoglobin, when systemic arterial blood flows through the tissues?**
A. 5ml/100ml of blood flow
B. 19.4ml/100ml of blood flow
C. 14.4ml/100ml of blood flow
D. 15ml/100ml of blood flow
E. 10ml/100ml of blood flow

9- **Which of the following factor will contribute in the formation of pleural effusion?**
A. Increased plasma colloid osmotic pressure
B. Decreased capillary hydrostatic pressure
C. Breaking of the capillary membrane due to inflammation of the surface of pleural cavity
D. Decreased interstitial colloid osmotic pressure
E. Increased lymphatic drainage

10- **A 70 year old female came to the out patient department with complain of shortness of breath while performing daily activities. Her old chest CT scan shows pulmonary fibrosis. Which of the following lab values are consistent with her diagnosis?**
A. Increased residual volume
B. Decreased FEV_1/FVC
C. Increased resistance to the airways
D. Decreased tital lung capacity
E. Increased vital capacity

11- **A 35 year old woman collapsed and was found dead in her home. Later autopsy was done which revealed that a blood clot that traveled to her lung caused her death. Which of the following will occur if an embolus totally blocks blood flow to an alveolus?**
A. The V/Q ratio will decrease
B. The V/Q ratio will increase
C. There will be decrease in the physiological dead space
D. The physiological shunt of the lung will increase
E. The PO2 of alveolus will be equal to the PO2 of mixed venous blood

12- A 40 year old man was found unconscious in his garage with his car engine still running. He was rushed to the emergency where his ABGs (arterial blood gases) were done, which revealed normal PO_2 but decreased oxygen saturation. Which of the following is the most probable cause?

A. Carbonmonoxide poisoning
B. Anemia
C. Carbondioxide poisoning
D. Decreased ventilation
E. Pulmonary thromboembolism

13- The pacemaker neurons responsible for generation of respiratory rhythm are located in which of the following region?

A. Apneustic center
B. Pneumotaxic center
C. Inspiratory neurons in dorsal respiratory group
D. Central chemoreceptors in medulla
E. Pre-Botzinger complex in the medulla

14- A 30 year old male is admitted to hospital with chest wall deformity and weakness of respiratory muscles showing restrictive pattern of disease. Which of the following variable will most likely be DECREASED in this patient?

A. Alveolar surface tension
B. Airway resistance
C. Chest wall compliance
D. PCO_2 in arterial blood
E. Blood flow to the lungs

15- A 40 year old woman known case of asthma presents to the emergency department with severe shortness of breath. She experiences an acute attack of asthma as she lost her bronchodilator inhaler the previous day. In asthma airway resistance is greater when?

A. There is laminar air flow compared to turbulent flow
B. There is lower value of Reynolds number
C. During inspiration compared to expiration
D. In the smaller airways compared to larger airways
E. In larger airways compared to smaller airways

16- A 30 year old pregnant female suffered from a road traffic accident. Emergency C-section was performed and the baby was delivered preterm (28 weeks). Pre term babies have surfactant deficiency, which cause the alveoli to collapse and result in a respiratory failure. Which of the following statement is correct about the changes present in the pre term baby compared to normal baby?

A. Decreased surface tension & lung compliance
B. Decreased surface tension & increased compliance
C. Increased surface tension & increased compliance
D. Increased surface tension & no change in lung compliance
E. Increased surface tension & decreased lung compliance

17- Which of the following factor cause stimulation of ventilation before the beginning of exercise (anticipatory changes)?

A. Collateral impulses to the brain stem from higher brain center
B. Partial pressure of oxygen
C. Partial pressure of CO_2
D. Decreased pH
E. Increased pH

18- During exercise the O_2-Hb disassociation curve shifted right & downwards. Which of the following statement regarding this shift is correct?

A. P_{50} is increased
B. P_{50} is decreased
C. Affinity of oxygen to Hb is increased
D. Oxygen carrying capacity of Hb is increased
E. Impaired ability to unload oxygen to the tissues

19- Which of the following statement is true regarding the chemical control of respiration?

A. CO2 directly stimulates the chemosensitive area in brain
B. O2 concentration greatly stimulates the chemosensitive area in brain
C. Hydrogen ions directly stimulates the chemosensitive area in brain
D. PCO2 stimulates the chemosensitive area by stimulating peripheral chemoreceptors
E. Hydrogen ions stimulate the chemosensitive area by stimulating peripheral chemoreceptors

20- Which of the following statement is true regarding the FEV1/FVC ratio?

A. The ratio for normal lung is 50%
B. The ratio in airway obstruction is increased above the normal value
C. The ratio in obstructive disease is decreased below normal value
D. In restrictive disease the ratio is decreased.
E. The ratio cannot be measured by spirometer.

21- Regarding vapor pressure which of the following statement is true?

A. It is added from the surface alveoli
B. It is only added when inspired air is dry
C. 47mmHg of pressure is added to inspired air
D. It does not humidify the inspired air
E. It does not dilute the gasses in inspired air

22- In alveolar capillaries the oxygen saturation of Hb is 100% but this saturation falls to 97% when the blood reaches the left atrium. What is the probable cause?

A. Some of the oxygen is consumed by the walls of pulmonary veins
B. Admixture of bronchial and pulmonary capillary blood
C. CO2 in the expired air decreases the saturation
D. Oxygen is consumed by the lung alveoli.
E. Some of the alveoli have physiological shunt

23- Which of the following is true regarding the transport of CO2?

A. 70% of CO2 circulates as carbamino compound
B. The venous partial pressure of CO2 is 45mmHg
C. The concentration of CO2 in volume% in venous blood is 48%
D. CO2 does not dissolve in fluid part of blood
E. CO2 is highly soluble and 100% of it is transported by dissolving in plasma

24- In SA node the pacemaker potential is because of

A. Increased leakiness of Na ions in pacemaker cells
B. An increase in K+ conductance in pacemaker cells
C. A decrease in Ca++ conductance in pacemaker cells
D. A decrease in Cl- conductance in pacemaker cells
E. Increased conductance of Na ions because of opening of Na fast channels

25- A 60 year old man reports several recent episodes of syncope (loss of consciousness). An electrocardiogram is performed showing disassociation between the P wave and QRS complexes. Which of the following is most commonly associated with syncope?
A. Sinus tachycardia
B. First degree heart block
C. Second degree heart block
D. Third degree heart block
E. Sinus bradycardia

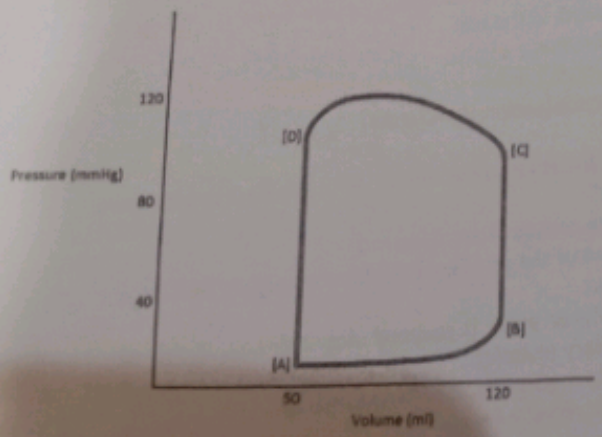
26- Which phase of cardiac cycle follow immediately after the beginning of QRS wave?
A. Iso volumic relaxation
B. Ventricular ejection
C. Atrial systole
D. Isovolumic contraction
E. Diastasis

27- A 70 year old man came to the cardiologist for evaluation. Auscultation of the precordium revealed a diastolic murmur prominent over the left sternal border. Which of the following condition causes diastolic murmur?
A. Aortic regurgitation
B. Aortic stenosis
C. Mitral valve prolapsed
D. Pulmonic stenosis
E. Tricuspid valve prolapsed

28- "Circus movement" in the ventricles is the cause of ventricular fibrillation. Which of the following condition in ventricular muscle will increase the risk of circus movements?
A. Increased refractory period
B. Shorter conductive pathway
C. Longer conductive pathway (ventricular hyper trophy)
D. Parasympathetic stimulation
E. Increased conduction velocity

29- During which phase of cardiac cycle ventricular volume is the lowest?
A. Atrial systole
B. Isovolumetric contraction
C. Rapid ventricular ejection
D. Rapid ventricular filling
E. Isovolumetric relaxation

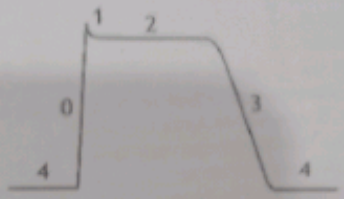
30 & 31. A 60 year old man has a resting heart rate of 72b/min, blood pressure of 120/80mmHg, and a normal body temperature. Using the pressure volume diagram of his left ventricle, answer the following questions.



30- Using the above pressure loop diagram what is the end diastolic volume?
A. 50 ml
B. 100 ml
C. 120 ml
D. 80 ml
E. End diastolic volume cannot be calculated from this diagram

31- In the above diagram, at what point does the aortic valve opens?
A. Point A
B. Point B
C. Point C
D. Point D
E. In between point C & D

32- The phases of ventricular muscle action potential are represented by numbers on the diagram below. At which point on the ventricular action potential the membrane potential is most dependent on calcium permeability?



A. Point 4
B. Point 0
C. Point 1
D. Point 2
E. Point 3

33- The total time taken by the impulse to travel starting from the SA node till the left ventricular muscle fiber is
A. 0.22 sec
B. 0.19 sec
C. 0.21 sec
D. 0.16 sec
E. 0.12 sec

34- Eddy current is the property of
A. Streamline flow
B. Laminar flow
C. Fluid with greater viscosity
D. Turbulent flow
E. It is not the property of fluids

35- An acute decrease in the arterial blood pressure elicits which of the following compensatory changes?
A. firing rate of the carotid sinus nerve is decreased
B. Increased parasympathetic outflow of the heart
C. Decreased heart rate
D. Decreased contractility
E. Decreased mean systemic filling pressure

36- Loss of vasomotor tone after a history of spinal anesthesia is indicative of:
A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

37- **A 15 year old boy suffered from head trauma compressing the underlying brain tissue. Which of the following blood pressure regulating mechanism occurs in response to an increased intracranial pressure (CNS Ischemic response)?**
A. Blood pressure and heart rate increase
B. Blood pressure and heart rate decrease
C. Blood pressure increases and heart rate decreases
D. Blood pressure decreases and heart rate increases
E. Blood pressure and heart rate remain constant

38- **All of the following will increase venous return except**
A. Negative Right Atrial pressure
B. Exercise
C. Increased force of contraction of heart
D. Gravity
E. Healthy venous pump

39- **Which of the following part of circulatory system has the greatest cross- sectional area?**
A. Aorta
B. Arteries
C. Veins
D. Venules
E. Capillaries

40- **When a person stands from its supine position, his/her heart rate is increased. Which of the following accounts for increase in heart rate upon standing?**
A. Decreased total peripheral resistance
B. Increased vasoconstriction
C. Increased after load on heart
D. Increased preload on the heart
E. Decreased venous return

41- **Release of which of the following substance cause vasodilation and increase the permeability of the capillaries during anaphylactic shock?**
A. Nitric oxide
B. Histamine
C. Adenosine
D. Carbondioxide
E. Atrial natriuretic peptide (ANP)

42- **A 40 year old male was brought to the emergency department unconscious with history of Road Traffic Accident (RTA) 1 hour earlier. He lost a lot of blood due to fracture of both legs. On examination he had a very feeble pulse & his systolic blood pressure was found to be 30mmHg and diastolic blood pressure was not recordable. Which of the following blood pressure regulating mechanism will be activated in this condition?**
A. Aortic baroreceptors
B. Carotid baroreceptors
C. CNS ischemic response
D. Carotid chemoreceptors
E. Aortic chemoreceptors

43- **During exercise total peripheral resistance decreases because of the effect of**
A. The sympathetic nervous system on skeletal muscle arterioles
B. The parasympathetic nervous system on skeletal muscle arterioles
C. Local metabolites on skeletal muscle arterioles
D. Histamine on skeletal muscle arterioles
E. Both parasympathetic & local metabolites on skeletal muscles

44- **Which of the following will cause decrease in [illegible] in a vessel?**
A. Increase in the radius of the vessel
B. Decreased resistance of the vessel
C. Increased pressure gradient across the vessel
D. Increased viscosity of blood
E. Decreased viscosity of blood

45- **The compensatory mechanisms in non-progressive shock include all of the following except:**
A. Arteriolar constriction
B. Increased heart rate
C. Sympathetic over activity
D. Sludging of small blood vessels
E. Increased level of argiotensin 2

46- **A 70 Kg man has a heart rate of 70beats/min. His End diastolic volume is 120ml & End systolic volume is 50ml. What will be his cardiac output?**
A. 5000ml
B. 4900ml
C. 4000ml
D. 5200ml
E. Cardiac output cannot be calculated

47- **A 37 year old female was brought to the emergency department in shock. Which of the following is the reason to direct treatment toward septic shock rather than hypovolemic shock?**
A. Cardiac output is higher than normal
B. Ventricular contractility is greater than normal
C. Total peripheral resistance is greater than normal
D. Heart rate is greater than normal
E. Both of them have the same line of treatment

48- **Mean arterial Pressure is?**
A. Systolic blood pressure+ Diastolic blood pressure / 2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic bloodpressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure+ Diastolic blood pressure

49- **A 50 year old man with 20 year of past history of hypertension has been diagnosed as the case of left ventricular failure. Which of the following will be the important clinical finding in this patient?**
A. Edema around the eyes
B. Edema in the feet
C. Pulmonary edema
D. Pulsating liver
E. Ascites (abdominal edema)

1.

50- **The 2nd heart sound is louder than the first heart sound because?**
A. More pressures are involved
B. Cusps of the semilunar valves are tougher than the Av valves
C. Semilunar valve is snapped closed without the aid of papillary muscles
D. Due to regurgitation of blood in aorta
E. Elastic recoil of aorta

...of the following part of circulatory ...has the greatest cross- sectional area?

A. Aorta
B. Arteries
C. Veins
D. Venules
E. Capillaries

...cause of which of the following substance ...cause vasodilation and increase the ...permeability of the capillaries during ...anaphylactic shock?

A. Nitric oxide
B. Histamine
C. Adenosine
D. Carbondioxide
E. Atrial natriuretic peptide (ANP)

38- Mean arterial Pressure is?

A. Systolic blood pressure+ Diastolic blood pressure /2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic blood pressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure+ Diastolic blood pressure

39- Which of the following condition will decrease the filtration across the capillary membrane?

A. Increased capillary hydrostatic pressure
B. Damage to the capillary membrane
C. Increased plasma colloid osmotic pressure
D. Increased interstitial fluid osmotic pressure
E. Malnutrition leading to decreased plasma albumin levels

40- Which of the following will cause decrease in blood flow in a vessel?

A. Increase in the radius of the vessel
B. Decreased resistance of the vessel
C. Increased pressure gradient across the vessel
D. Increased viscosity of blood
E. Decreased viscosity of blood

degree F
beats/ degree F
21 beats/ degree C
both A & C

In which of the following cardiac muscular conducting tissue, propagation of the action potential is the fastest?

A. SA node
B. AV node
C. His bundles
D. Purkinje fibers
E. None of the above

The pre potential in case of pacemaker potential is due to presence of

A. Voltage gated fast Sodium channels in SA nodal cell membrane
B. Sodium leak channels in SA node
C. Opening of transient (slow) calcium channels
D. Slow closure of voltage gated potassium channels
E. All B,C and D

Movement of the following ions is responsible for the Plateau phase of the heart?

A. Influx of Na+ and K+ ions.
B. Influx of Ca++ and efflux of K+ ions.
C. Influx of Na+ and efflux of K+ ions.
D. Influx of Na+ and Ca++ ions.
E. Influx of Ca++ only

11. Mean arterial Pressure is?

A. Systolic blood pressure+ Diastolic blood pressure / 2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic blood pressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure+ Diastolic blood pressure

22. Stimulation of baroreceptors leads to

A. Increase in blood pressure
B. Increase in heart rate
C. Decrease in blood pressure and decrease in heart rate
D. Increase in blood pressure and decrease in heart rate
E. Increase in blood pressure and increase in heart rate

23. Right ventricular failure leads to

A. pulmonary edema
B. reduced systemic arterial pressure
C. decreased concentration of aldosterone in the blood
D. edema of feet
E. edema of face

24. Vessels which are not under sympathetic tone are

A. Arterioles
B. Capillaries
C. Veins
D. Small arteries
E. Large arteries

25. If coronary artery diameter is reduced by 50% expected reduction in blood flow would be how many times less?

A. 4 times
B. 12 times
C. 64 times
D. 16 times
E. 8 times

26. If a patient has an oxygen consumption of 240ml/min, a pulmonary vein oxygen concentration of 180ml/L and a pulmonary artery oxygen concentration of [illegible] what is the cardiac output?

C. 16L/min

27. The vagus nerve [illegible]
A. is located in the [illegible] portion of the pons
B. Decreases its sympathetic activity to the blood vessels when blood pressure falls
C. May not be blocked by spinal anesthesia
D. Does not induce vaso-constriction or vaso-dilatation
E. Concerned with caliber of blood vessels & rate of heart beat

28. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

29. Decreased NaCl in tubular filterate sensed by Macula densa causes:

A. Increased afferent arteriolar resistance.
B. Decreased efferent arteriolar resistance.
C. Increased Renin & Angiotensin.
D. Decreased Renin & Angiotensin.
E. Positive feed back regulation of arterial B.P.

30. Stimulation of baroreceptors leads to

A. Increase in blood pressure
B. Increase in heart rate
C. Decrease in blood pressure and decrease in heart rate
D. Increase in blood pressure and decrease in heart rate
E. Increase in blood pressure and increase in heart

31. In which of the following conditions there will be a decreased cardiac output?

A. Hyperthyroidism
B. Beriberi
C. Atrioventricular fistula
D. Anemia
E. Acute myocardial infarction.

32. Vasodilator substances include all of the following except:

A. Bradykinin
B. serotonin
C. histamine
D. prostaglandin
E. vasopressin

33. The transpulmonary pressure is:

A. The same as intrapulmonary pressure.
B. Equal to pleural pressure.
C. The difference of pleural and alveolar pressures.
D. The difference of intrathoracic and alveolar pressures.
E. The sum of pleural and alveolar pressures.

34. Which of the following volume / capacity is measured by Helium Dilution Method?

A. Tidal volume
B. Expiratory reserve volume
C. Inspiratory reserve volume
D. Functional residual capacity
E. Vital capacity

35. The following factors affect the rate of gas diffusion through the respiratory membrane EXCEPT:

A. Thickness of the respiratory membrane
B. Surface area of the membrane
C. Diffusion coefficient of the gas
D. Partial pressure difference between the two sides of the membrane
E. Surface tension

36. Which of the following group of neurons in the respiratory center emits repetitive bursts of inspiratory nerve impulses?

A. Ventral respiratory group

C. Local potential at motor end plate present at neuro-muscular junction
D. Saltatory potential
E. Receptor potential

Q26. Multiunit smooth muscle fibers are:

A. Supplied by many muscle fibers by a single nerve fiber
B. One muscle fiber supplied independently by one nerve fiber
C. Contract in response to hormonal stimulation
D. Do not obey the nervous stimulation
E. Are slowly contracting muscles

Q27. Which of the following is one of the major causes of death after myocardial infarction?

A. Increased cardiac output
B. Decreased pulmonary interstitial volume
C. Fibrillation of the heart
D. Increased cardiac contractility
E. None of the above

Q28. In skeletal muscle, the major function of the T tubules is thought to be:

A. A source of acetylcholine
B. A structural support during contraction
C. A pathway for the inward spread of electrical activity GYTON
D. A calcium sink
E. A pressure release mechanism

Q29. In smooth muscle the calcium binding protein is:

A. Troponin
B. Troponin C
C. Actin
D. Tropomyosin
E. Calmodulin

Q30. ECG is a graphical record of:

A. Mechanical activity of heart
B. Electrical activity of heart
C. Closure of valves
D. Contraction and relaxation
E. Systole and diastole

Q31. Which of the following phases of the cardiac cycle follows immediately after the beginning of the QRS wave?

A. Isovolumic relaxation
B. Ventricular ejection
C. Atrial systole
D. Diastasis
E. Isovolumic contraction

Q32. Which of the following events is represented on the ECG?

A. SA node depolarization
B. AV node depolarization
C. His Bundle depolarization
D. Atrial muscle depolarization
E. Atrial repolarization

Q33. Which cardiac event follows P wave?

A. Atrial contraction
B. Ventricular contraction
C. Atrial filling
D. Ventricular filling
E. Both A & B

Q34. Increase in P-R interval is due to:

A. 1st degree heart block
B. 2nd degree heart block
C. Complete heart block
D. Atrial flutter
E. Cardiac arrest

Q35. Which of the following events is associated with the first heart sound?

A. Closing of the aortic valve
B. Inrushing of blood into the ventricles during diastole
C. Beginning of diastole
D. Opening of the A-V valves
E. Closing of the A-V valves

Q36. Rapid upstroke of ventricular action potential is due to:

A. Voltage gated slow Ca+ channels
B. Voltage gated fast Na+ channels
C. Voltage gated K+ channels
D. Na+K+ pump
E. Voltage gated fast Ca+ channels

Q37. Calculate the Cardiac Output if stroke volume is 70 ml and Heart rate is 70/min.

A. 1650 ml/min
B. 4550ml/min
C. 4900ml/min
D. 625 0ml/min
E. 7500ml/min

Q38. Resting membrane potential of pace maker cells is?

A. -23 mili volts
B. +15 mili volts
C. -55 mili volts
D. -90 mili volts
E. +35 mili volts

Q39. The AV Nodal delay is basically due to:

A. Thick AV node.
B. Insulation between atrial and ventricular syncitia.
C. Presence of transitional fibers, fewer gap junctions and hyperpolarized cells in the node.

its sympathetic innervations.
The fact that it is not innervated by parasympathetic nervous system.

Q40. Which of the following is a characteristic of progressive hemorrhagic shock?

A. Increased cardiac contractility
B. Endotoxin release
C. Decreased capillary permeability
D. Increased cell membrane active transport of sodium
E. Tissue alkalosis

Q41. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

Q42. Coronary blood flow increases during:

A. Systole
B. Diastole
C. Repolarization of ventricle
D. Depolarization of ventricle
E. None of the above

Q43. The transpulmonary pressure is:

A. The same as intrapulmonary pressure.
B. Equal to pleural pressure.
C. The difference of pleural and alveolar pressures.
D. The difference of intrathoracic and alveolar pressures.
E. The sum of intrapulmonary and alveolar pressures.

Q44. The oxy hemoglobin dissociation curve during the severe exercise :

A. Shifts to left
B. Shifts to right
C. Does not shift
D. Becomes more steep
E. None of the above

Q45. During acclamitization at high altitude following changes occur except:

A. Pulmonary ventilation increase
B. Cardiac output increase
C. Hemoglobin and RBCs increase
D. Diffusion capacity of lungs decrease
E. Mitochondria in cells increase

Q46. Which of the following group of neurons in the respiratory centre emits repetitive bursts of Inspiratory ramp action potentials?

A. Ventral respiratory group
B. Pneumotaxic centre
C. Apneustic centre
D. Dorsal respiratory group
E. None of the above

Q47. Which of the following volume / capacity is measured by Helium Dilution Method?

A. Tidal volume
B. Expiratory reserve volume
C. Inspiratory reserve volume
D. Functional residual capacity
E. Vital capacity

Q48. FEV1 is characteristically reduced in:

A. Pulmonary odema
B. Respiratory failure
C. Restrictive lung disease
D. Obstructive lung disease
E. Pulmonary fibrosis

Q49. The composition of sweat is modified in tubular part of gland under the effect of Aldosterone as:

A. Na & Cl ions are added
B. Na & Cl ions are absorbed
C. K+ ion is added
D. K+ ion is absorbed
E. Both B and C

Q50. Body temperature is regulated by a set point in the:

A. Anterior nucleus of hypothalamus
B. Posterior nucleus of hypothalamus
C. Hypothalamus
D. Preoptic area of hypothalamus
E. None of the above

11. What %age of forced vital capacity (FVC) is expired during first second [FEV 1] in a normal healthy person??

A. 20
B. 50
C. 60
D. 80
E. 100

12. FEV1 is characteristically reduced in:

A. Pulmonary odema
B. Respiratory failure
C. Restrictive lung disease
D. Obstructive lung disease
E. Pulmonary fibrosis

13. Under normal resting conditions, how much carbon dioxide is transported from the tissues to the lungs in each 100 ml of blood??

A. 2 ml
B. 3 ml
C. 4 ml
D. 5 ml
E. None of the above

14. The oxy hemoglobin dissociation curve during the severe exercise :

A. Shifts to left
B. Shifts to right
C. Does not shift
D. Becomes more steep
E. None of the above

15. Chemical regulation of respiration is maximally affected by:

A. O_2
B. CO_2
C. Hydrogen ions
D. Lactic acid
E. All of the above

16. Regarding central chemoreceptors, choose the best statement?

A. Are located bilaterally in the medulla
B. Hydrogen ions in the blood cannot cross the blood Brain barrier as does the CO_2.
C. Both A and B
D. Are sensitive to the changes in the pH of CSF
E. All of the above

17. The term [illegible] indicates:

A. Partial pressure of O_2 in the [illegible] blood
B. The percentage of Hb saturation in the [illegible]
C. It is a correlation between partial pressure of O_2 and 50% saturation of Hb
D. None of the above
E. All of the above

18. Which of the following mechanism is responsible for producing cyanosis?

A. Increased Carbon dioxide in the blood
B. Deoxygenation of hemoglobin in the blood
C. Decreased amount of hemoglobin in the blood
D. Increased carboxy hemoglobin in the blood
E. Increased amount of HCO_3^- ions in the blood

19. Inability of the tissues to utilize oxygen is know as:

A. Anemic hypoxia
B. Hypoxic hypoxia
C. Cytotoxic hypoxia
D. Stagnant hypoxia
E. None of the above

20. Pneumothorax means:

A. Presence of air in the pleural cavity
B. There is loss of normal negative intrapleural pressure
C. Can cause collapse of the lung
D. Tension pneumothorax can be rapidly fatal
E. All of the above

A is correct

AZRA NAHEED

MEDICAL COLLEGE

LAHORE

Department of Physiology

1ST YEAR MBBS 2015-16

System Test: RESPIRATORY SYSTEM

INSTRUCTIONS

1. The main muscle of inspiration is:
   A. Diaphragm
   B. Sternocleidomastoid
   C. External intercostals
   D. Internal intercostals
   E. Abdominal muscles

2. Transpulmonary pressure is:
   A. Pressure difference between that in the alveoli and that on the outer surfaces of the lungs
   B. Difference between the alveolar pressure and the pleural pressure
   C. Is a measure of the elastic forces in the lungs that tend to collapse the lungs
   D. Recoil pressure
   E. All of the above

3. The diffusing capacity of a gas is the volume of gas that will diffuse through a membrane each minute for a pressure difference of 1mmHg. Which of the following gases is often used to estimate the oxygen diffusing capacity of the lungs?
   A. Carbon dioxide
   B. Carbon monoxide
   C. Cyanide gas
   D. Nitrogen
   E. Oxygen

4. Compliance of the lungs:
   A. Depends partly on airway conductance measured during continuous breathing
   B. Is defined as the change in volume per unit change in expanding pressure.
   C. Is decreased if surfactant is depleted
   D. Is mainly determined by the elastic forces in the lungs
   E. All of the above

5. The functional residual capacity (FRC) in the lungs of a young healthy adult?
   A. Is equal to the expiratory reserve volume plus tidal volume
   B. Is the amount of air that remains in the lungs at the end of normal expiration
   C. Is the amount of air that remains in the lungs at the end of forced inspiration
   D. Is about one litre
   E. Becomes smaller if airflow resistance increases

6. Which of the following is not measured by spirometry?
   A. Tidal volume
   B. Inspiratory capacity
   C. Vital capacity
   D. Expiratory reserve volume
   E. Residual volume

7. Which of the following is not the part of respiratory unit?
   A. Respiratory bronchiole
   B. Alveolar duct
   C. Terminal bronchiole
   D. Atria
   E. Alveoli

8. Which of the following muscles are used for expiration?
   A. Diaphragm and external intercostals
   B. Diaphragm and internal intercostals
   C. Diaphragm only
   D. Internal intercostals and rectus abdominis
   E. Scalene muscles

9. Anatomical dead space:
   A. Is equal to 150 ml's
   B. Conditions the inspired air
   C. Can be flushed by Nitrogen wash out method
   D. Filters the inspired air
   E. All of the above

10. Physiological Dead Space:
    A. Includes the wasted ventilation
    B. Is equal to the sum of anatomical and alveolar dead space
    C. Increases with age
    D. Measured by Bohr's method
    E. All of the above

AZRA NAHEED MEDICAL COLLEGE LAHORE

Department of Physiology

1ST YEAR MBBS

System Test: HEART

1. Which of the following has the slowest rate of conduction of potential?
   A. Atrial muscle
   B. Atrioventricular node
   C. Atrioventricular bundle
   D. Purkinje fibers
   E. Ventricular muscle

2. Which

AZRA NAHEED MEDICAL COLLEGE LAHORE

Department of Physiology
1ST YEAR MBBS 2013-14
System Test: HEART PHYSIOLOGY

MULTIPLE CHOICE QUESTIONS (MCQS) Total Marks 20, Time = 20mins
Select Single best answer, all questions carry equal marks.
ROLL #: _____ DATE: 09-04-14

INSTRUCTIONS
1-All objective questions are to be attempted on the paper and returned to the invigilator within 20 mins.
2-Any cutting and overwriting in objective part will not be accepted.

1. **Which of the following structures has the slowest rate of conduction of the cardiac action potential?**
   A. Atrial muscle
   B. Anterior internodal pathway
   C. Atrioventricular bundle fibers
   D. Purkinje fibers
   E. Ventricular muscle

2. **Which of the following is true with regard to atrial systole?**
   A. Atrioventricular valves remain closed during atrial systole.
   B. Blood is forced through the venae cavae by atrial systole.
   C. Atrial filling can only occur during atrial systole.
   D. Atrial systole is responsible for moving over 25 percent of atrial blood into the ventricles.
   E. About 20 percent of atrial blood goes into the ventricles before atrial systole

3. **Which of the following cardiac activity is helped by AV nodal delay?**
   A. Ventricular filling
   B. Atrial filling
   C. Ventricular depolarization
   D. Ventricular contraction
   E. Atrial contraction

4. **Which of the following phases of the cardiac cycle follows immediately after the beginning of the QRS wave?**
   A. Isovolumic relaxation
   B. Ventricular ejection
   C. Atrial systole
   D. Diastasis
   E. Isovolumic contraction

5. **Which of the following type of ionic channels are responsible for the spike potential in ventricular muscles of heart?**
   A. Fast calcium channels
   B. Sodium leak channels
   C. Voltage gated sodium channels
   D. Slow calcium channels
   E. Voltage gated potassium channels

6. **Which of the following events is represented on the ECG?**
   A. SA node depolarization
   B. AV node depolarization
   C. His Bundle depolarization
   D. Atrial muscle depolarization
   E. Atrial repolarization

7. **Which cardiac event follows P wave?**
   A. Atrial contraction
   B. Ventricular contraction
   C. Atrial filling
   D. Ventricular filling
   E. Both A & B

8. **Which of the following pairs is INCORRECT concerning the Einthoven triangle?**
   A. Lead I: RA/LA
   B. Lead II: RA/LL
   C. Lead III: LA/LL
   D. All of the pairs are correct.
   E. None of all

9. **Increase in P-R interval is due to:**
   A. 1st degree heart block
   B. 2nd degree heart block
   C. Complete heart block
   D. Atrial flutter
   E. Cardiac arrest

10. **If the sino atrial node discharges at 0.90 seconds, when will the action potential normally arrive at the epicardial surface at the base of the left ventricle?**
    A. 0.22 second
    B. 0.18 second
    C. 0.16 second
    D. 0.12 second
    E. 0.09 second

Heart

erkalemia causes?

Resting membrane potential of cardiac muscle more negative
As the membrane potential increases in cardiac muscle, intensity of action potential decreases.
The heart becomes flaccid and dilated.
Heart contractility becomes more vigorous.
Increases the conduction of cardiac impulse from atria to ventricles through the AV bundle.

What is the resting membrane potential of the S-A nodal fibers?

A. -100 millivolts
B. -90 millivolts
C. -80 millivolts
D. -55 millivolts
E. -20 millivolts

3. Tetanization of heart is prevented by property of:

A. Conductivity
B. Excitability
C. Rhythmicity
D. Long refractory period
E. Short refractory period

14. Cause of refractory period in ventricular muscle is?

A. Slow conduction of action potential.
B. Slow closure of voltage gated potassium channels.
C. Closure of inactivation gates of sodium channels till RMP.
D. Calcium influx in plateau phase.
E. None of the above

15. Which activity of Cardiac valves produces the first heart sound?

A. Closure of Atrio-Ventricular Valves
B. Closure of Semilunar valves
C. Opening of Semilunar valves
D. Opening of Atrio -- Ventricular valves
E. None of the above

16. Important histological features in cardiac muscle tissue responsible for excitation-contraction coupling is:

A. Markedly developed ER and triads
B. Well developed T-tubules (More length and volume).
C. Well developed Ryanodine receptors.
D. C and D
E. Both B and C

17. According to Einthoven's law, if the voltage is +1.0 millivolt in lead I and +1 millivolts in lead III, what is the QRS voltage in lead II?

A. 0.05 millivolt
B. 0.5 millivolt
C. 1.0 millivolt
D. 1.2 millivolts
E. 2.05 millivolts

II = I + III
= -1 + 2
= -1

18. Automaticity is best developed in the cells of SA node because SA nodal tissue has?

A. Na leak channels.
B. Slow calcium channels.
C. Voltage gated fast Na channels.
D. A and B
E. B and C

19. Which of the following conditions in ventricular muscle decreases the tendency for circus movement?

A. Administration of epinephrine
B. Dilated heart
C. Decreased conduction velocity
D. Repetitive electrical stimulation
E. Longer refractory period

20. Vagal stimulation results in the fall of heart rate. This is due to increased permeability of sinoatrial nodal fiber membrane to:

A. Ca^{++}
B. Cl^-
C. K^+
D. Na^+
E. Na^+ and Ca^{++}

After Hyperpolarization
Hyperpolarization

Q15.Unmyelinated nerve conduction and saltatory conduction differs in that:
A. In unmyelinated nerve conduction energy is not a problem
B. In unmyelinated nerve conduction velocity is high
C. In unmyelinated nerve conduction more energy is required and velocity is slow
D. In saltatory nerve conduction more energy is required, velocity is slow and less space is utilized
E. None of the above

Q16.Myasthenia gravis is characterized by:
A. Depression of signal transmission at the neuro muscular junction
B. Enhanced end plate potential
C. Narrowed synaptic cleft
D. An over abundance of acetylcholine receptors on the muscle fibers
E. Needs treatment with curare like drugs such as d-tubocurarine

Q17.The protein responsible for iron transport in plasma is:
A. α 1-anti trypsin
B. Ferritin
C. Ceruloplasmin
D. Apo-ferritin
E. Apo-transferrin

Q18.Intrinsic pathway of blood coagulation is a slower process as compared to the extrinsic pathway. It is initiated due to blood trauma or contact of blood with collagen. Which factor is activated initially in this pathway?
A. Factor VII
B. Factor II
C. Factor XII
D. Factor Xa
E. Factor X

Q19.Interleukin-2 (IL-2) is an important molecule in the immune response. What is its function?
A. It binds to and presents antigen
B. It stimulates proliferation of cytotoxic T cells
C. It kills virus-infected cells
D. It is required for proliferation of helper T cells
E. None of the above

Q20. A 6 year old boy bruises easily and has previously bleeding gums. The maternal grandfather also had a similar disorder. You suspect the deficiency of:
A. Prothrombin activator
B. Factor II
C. Factor XIII
D. Factor X
E. Factor VII

E. None of the above

Q22. The most fatal complication of mismatched bl transfusion is due to:
A. Agglutination of recipient's RBC
B. Jaundice
C. Fever
D. Renal shut down and anuria
E. All of the above

Q23. Amjad got bilateral kidney failure due to diabet He was operated for a kidney transplant. The kid was donated by his identical twin brother. This is known as:
A. Autograft
B. Isograft
C. Allograft
D. Xenograft
E. Heterograft

Q24.A four months pregnant lady is blood type O, I negative; her husband is type A, Rh-positive. Thi her first child. What should be done to prev erythroblastosis fetalis for next babies of her?
A. Nothing
B. Administer anti-D immunoglobulin to the mothe now
C. Administer anti-D immunoglobulin to the child after delivery
D. Administer anti-D immunoglobulin to the mothe after delivery of Rh-positive baby
E. Administer anti-D immunoglobulin to the child the child is Rh-positive

Q25.Which of the following events is represented on ECG?
A. SA node depolarization
B. AV node depolarization
C. His Bundle depolarization
D. Atrial muscle depolarization
E. Atrial repolarization

Q26.What is the resting membrane potential of the S nodal muscle fibers?
A. -55 millivolts
B. -90 millivolts
C. -80 millivolts
D. -100 millivolts
E. -20 millivolts

Q27.Increase in P-R interval is due to:
A. 1st degree heart block
B. 2nd degree heart block
C. Complete heart block
D. Atrial flutter
E. Cardiac arrest

Cytotoxic T cells

17- which protein transport iron into Plasma → Apo-transf

...MENT OF PHYSIOLOGY

Grand Test (2015)

...T YEAR MBBS 2014-15

...interieur" or internal environment to ...ue cells is constituted by:
...Intracellular fluid
...Interstitial fluid
Transcellular fluid
Blood
Plasma

Running hundred meter race with an intention to win, putting more and more speed at each next running footstep is a good example of:
A. Negative feedback mechanism
B. Feed forward mechanism
C. Positive feedback mechanism
D. All of the above
E. None of the above

Q3. The gene expression includes:
A. Transcription only
B. Posttranslational processing
C. Translation only
D. Peptide linkage only
E. Transcription, translation and protein synthesis

Q4. Synthesis of carbohydrates like chondroitin sulphate and hyaluronic acid is the function of:
A. RER
B. SER
C. Golgi apparatus
D. Peroxisomes
E. Lysosomes

Q5. The substrate for common pathway of glucose, amino acid and fatty acid metabolism in mitochondria is:
A. Acetyl CoA
B. Succinyl CoA
C. Lactic acid
D. Pyruvic acid
E. Citric acid

6. Lysosomes differ fro...
A. Lysosome are de...
B. Lysosomes are ...
C. Lysosomes have ...
...ydrolases
D. Lysosomes dom...
E. Peroxisomes ar...

...a the cell membra...
...through the me...
...Peripheral protei...
Plasma proteins
Protruding prot...
Lateral protein...

...INSTRUCTIONS
1-All objective questions are to be ...
to the invigilator within 30 minutes ...
2-Any cutting and overwriting will be ...

Q8. A single triplet of 3 nucleotides ... known as:
A. Codon
B. Anticodon
C. Code
D. Promoter
E. Genes

Q9. Transcription refers to the process:
A. Where a mRNA is used as a template for ... production
B. Where a DNA sequence is copied into RNA ... the purpose of gene expression
C. Where DNA wraps around histones to form ... nucleosome
D. Of replication of DNA before mitosis
E. Of replication before meiosis

Q10. Regression of uterus after delivery of a baby is ... function of:
A. Smooth endoplasmic reticulum
B. Golgi apparatus
C. Lysosomes
D. Mitochondria
E. Peroxisomes

Q11. The organelle of the cell that synthesizes the fatty ... substances including steroid hormones is:
A. Golgi apparatus
B. Nucleus
C. Ribosome
D. Rough endoplasmic reticulum
E. Smooth endoplasmic reticulum

Q12 Triad ... each sarcomere consists of ...
...terms which are part of endoplasmic ...
...terms and one T tubule
...bules which are invaginations of ...
...ell and one T tubule
...terms and two tubule

...n of brain nerve axon membrane is ...
...cytes
...cell

B and C

Q29. In which of the following conditions there will be a decreased cardiac output?
A. Hyperthyroidism
B. Beriberi
C. Arteriventricular fistula
D. Anemia
E. Acute myocardial infarction

Q30. Vagal stimulation results in fall of heart rate. This is due to increased permeability of S-A nodal fiber membrane to:
A. Ca^{++}
Cl
C. K^+
D. Na^+
E. Na^+ and Ca^{++}

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A. Closure of Atrio-Ventricular Valves
B. Closure of Semilunar valves
C. Opening of Semilunar valves
D. Opening of Atrio – Ventricular valves
E. None of the above

Q32. Vessels which are not under sympathetic tone are:
A. Arterioles
B. Capillaries
C. Veins
D. Small arteries
E. Large arteries

Q33. Mean arterial Pressure is:
A. Systolic blood pressure+ Diastolic blood pressure / 2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic blood pressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure + Diastolic blood pressure

Q34. Which of the following parts of circulation has highest compliance?
A. Capillaries
B. Large arteries
C. Veins
D. Aorta
E. Small arteries

Q35. Coronary blood flow increases during:
A. Systole
B. Diastole
C. Repolarization
D. Depolarization
E. None of the above

E. Neurogenic shock

Q37. Stimulation of baroreceptors leads to reflex
A. Increase in blood pressure
B. Increase in heart rate
C. Decrease in blood pressure and decrease in heart rate
D. Increase in blood pressure and decrease in heart rate
E. Increase in blood pressure and increase in heart rate

Q38. The cardiac output is:
A. The volume of blood pumped by each ventricle
B. The volume of blood pumped by each ventricle/second
C. It is the product of heart rate and end systolic volume
D. The volume of blood pumped by each ventricle/beat
E. The volume of blood pumped by each ventricle/minute

Q39. The raised intracranial pressure causes brain ischemia which results in the elevation of systemic blood pressure this is known as:
A. Baroreceptor reflex
B. Cushing reflex
C. Bain bridge reflex
D. A and B
E. B and E

Q40. The most serious of all cardiac arrhythmias which if not stopped within 1 to 3 minutes, is almost invariably fatal:
A. Paroxysmal Tachycardia
B. Premature Contractions
C. Incomplete Atrio-ventricular heart block
D. Ventricular Fibrillation
E. Atrial Fibrillation

Q41. The main muscle of inspiration is:
A. Diaphragm
B. Sternocleidomastoid
C. External intercostals
D. Internal intercostals
E. Abdominal muscles

Q42. Transpulmonary pressure is:
A. Pressure difference between that in the alveoli and on the outer surfaces of the lungs
B. Difference between the alveolar pressure and pleural pressure
C. Measure of the elastic forces in the lung tending to collapse the lungs

heart stop → diastole

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A. Is equal to the expiratory reserve volume plus tidal volume
B. Is about one litre
C. Is the amount of air that remains in the lungs at the end of forced inspiration
D. Is the amount of air that remains in the lungs at the end of normal expiration
E. Becomes smaller if air -passages resistance increases

Q45. Chemical regulation of respiration is maximally affected by:
A. O_2
B. CO_2
C. Hydrogen ions
D. Lactic acid
E. All of the above

Q46. The alveoler ventilation means:
A. Tidal Volume – Dead space volume X Respiratory Rate
B. = 4200 mls/min
C. = 6000 mls/min
D. It is same as pulmonary ventilation
E. Both A and B

Q47. Degeneration or diminished functi... myenteric plexus in the dista) third of e... wall leads to
A. Dysphasia
B. Achlasia
C. Megaesophagous
D. Substernal pain and dyspepsia
E. Both A and B

Q48. Regarding Gastrin, choose the bes...
A. Is secreted by I-cells in the duoden...
B. Increases emptying of the stomach
C. Inhibits secretion of the gastric juic...
D. Its secretion is stimulated by the pr... digestion
E. Increases motility of intestines

Q49. The center for defecation reflexis...
A. Brain
B. Lumbar segments L2,L3,L4
C. Sacral segment S2,3,4
D. Medulla
E. Pons

Q50. Damage to pelvic nerves does whi... following?
A. Increases the strength of defecatio...
B. Results in continuous urge to defe...
C. Has no effect on defecation reflex
D. Attenuates or weakens the defeca...
E. Increases co traction of the colon

RC = 2300
V = 1100 + 1200
= 2300

ardiogenic shock may be due to the following reasons except:

A. Severe heart valve dysfunction
B. Heart arrhythmias
C. Hypothyroidism
D. Diabetes mellitus polyuria
E. Myocardial infaction

2. 35% loss of total blood volume leads to:

A. Compensated shock
B. Progressive shock
C. Irreversible shock
D. No effect on cardiac output & BP
E. None of the above

3. The compensatory mechanisms in non-progressive shock include all of the following except:

A. Arteriolar constriction
B. Increased heart rate
C. Sympathetic overactivity
D. Sludging of small blood vessels
E. Increased level of angiotensin 2

4. Angiotensin 2 in compensated shock causes to restore the BP by:

A. Increasing fluid shift from ECF to vascular compartment
B. Causing vasodilation throughout whole body blood vessels
C. Increasing the inverse stress relaxation
D. Increasing the contractibility of heart
E. Increasing aldosterone secretion from adrenal cortex

5. Generalized cellular deterioration includes all of the following in irreversible shock except:

A. Failure of Na K pump
B. Depressed mitochondrial activity
C. Increased transcription & translation
D. Decreased glucose uptake
E. Breaking of lysosomal membrane

6. According to local metabolic control theory, the coronary circulation will increase in all of the following except:

A. Increased O_2 consumption
B. Increased K^+ and H^+ ions
C. Adenosine leakage in ECF of cardiac tissue
D. Sympathetic nerve stimulation of heart
E. Vagal stimulation of heart

7. Regarding the special characteristics of coronary circulation, following is true:

A. The coronary blood flow decreases during diastole
B. The coronary blood flow increases during diastole
C. Catecholamines increase coronary blood flow by acting on muscarinic receptors
D. Acetylcholine at vagal nerve ending decreases coronary blood flow by acting on α or β receptors
E. Thyroxine decreases coronary blood flow

8. Neurogenic shock occurs basically due to:

A. Excessive blood loss
B. Increased vascular resistance
C. Decreased vasomotor tone to blood vessels
D. Examine fluid shift to ECF
E. Examine urine output

9. Special features of septic shock include all of the following except:

A. Low cardiac output
B. Excessive arteriolar dilation & high cardiac output
C. Agglutination of RBCs & sludging of blood vessels
D. Disseminated intravascular coagulation

ch of the following compensatory

rate of the carotid sinus nerve is
ased
ased parasympathetic outflow of the heart
eased heart rate
eased contractility
eased mean systemic filling pressure

ar old woman came to her family
an with complain of shortness of breath
tion and an episode of syncope (loss of
usness) while doing her household
. A systolic ejection murmur is
tated that radiates to the carotid arteries.
is the probable diagnosis?
ortic regurgitation
Pulmonic regurgitation
Mitral stenosis
Aortic stenosis
Tricuspid stenosis

s of vasomotor tone after a history of
ial anesthesia is indicative of:
Hypovolemic shock.
Neurogenic shock.
Septic shock.
Anaphylactic shock.
Cardiogenic shock

37 year old female was brought to the
nergency department in shock. Which of the
llowing is the reason to direct treatment
oward septic shock rather than hypovolemic
hock?
A. Cardiac output is higher than normal
B. Ventricular contractility is greater than normal
C. Total peripheral resistance is greater than normal
D. Heart rate is greater than normal
E. Both of them have the same line of treatment

A 15 year old boy suffered from head trauma compressing the underlying brain tissue. Which of the following blood pressure regulating mechanism occurs in response to an increased intracranial pressure?
A. Blood pressure and heart rate increase
B. Blood pressure and heart rate decrease
C. Blood pressure increases and heart rate decreases
D. Blood pressure decreases and heart rate increases.
E. Blood pressure and heart rate remain constant

constriction to help to control bleeding, an increase in the local concentration of which of the following agents will cause vasoconstriction?
A. Nitric oxide
B. Angiotensin II
C. Lactic acid
D. Adenosine
E. Carbondioxide

32- A 40 year old male was brought to the emergency department unconscious with history of Road Traffic Accident (RTA) 1 hour earlier. He lost a lot of blood due to fracture of both legs. On examination he had a very feeble pulse & his systolic blood pressure was found to be 30mmHg and diastolic blood pressure was not recordable. Which of the following blood pressure regulating mechanism will be activated in this condition?
A. Aortic baroreceptors
B. Carotid baroreceptors
C. CNS ischemic response
D. Carotid chemoreceptors
E. Aortic chemoreceptors

33- During exercise total peripheral resistance decreases because of the effect of
A. The sympathetic nervous system on skeletal muscle arterioles
B. The parasympathetic nervous system on skeletal muscle arterioles
C. Local metabolites on skeletal muscle arterioles
D. Histamine on skeletal muscle arterioles
E. Both parasympathetic & local metabolites on skeletal muscles

34- The compensatory mechanisms in non-progressive shock include all of the following except:
A. Arteriolar constriction
B. Increased heart rate
C. Sympathetic over activity
D. Sludging of small blood vessels
E. Increased level of argiotensin 2

35- When a person stands from its supine position, his/her heart rate is increased. Which of the following accounts for increase in heart rate upon standing?
A. Decreased total peripheral resistance
B. Increased vasoconstriction
C. Increased after load on heart
D. Increased preload on the heart
E. Decreased venous return

Nutrition Mid Modular Test
Date: 25-09-19

NAME: Hasnain Ali

INSTRUCTIONS
1-All objective questions are to be attempted on the paper and submitted to the invigilator within 30 mins
2-Any cutting and overwriting on objective part will not be accepted

1- A person is on Propranolol therapy. Shortage of which receptor is responsible for decreased cardiac output.
A. Alpha receptors
B. Beta receptors → cardioacceleratory
C. Nicotinic receptors
D. Muscarinic receptors
E. Acetylcholine receptors

2- Which of the following is pre-ganglionic sympathetic neurotransmitter?
A. Glycine
B. Nor- epinephrine
C. Adrenaline
D. Acetylcholine
E. Dopamine

3- Which cranial nerve does not carry parasympathetic fibers
A. III
B. X
C. VI
D. VII
E. IX

4- Parasympathetic stimulation causes
A. Relaxation of intestinal sphincters
B. Decreased Intestinal motility
C. Relaxation of Detrusor
D. Dilatation of Bronchi
E. Dilatation of pupillary sphincters

5- The Stress response (alarm reaction) of sympathetic nervous system causes.
A. Increased arterial pressure
B. Increased blood glucose concentration
C. Both A & B
D. Decreased arteria l blood flow to muscle
E. Decreased blood glucose concentration

6- The function of which of the following is dominated by the sympathetic nervous system?
A. Systemic heart vessels
B. Heart
C. Gastrointestinal gland secretion
D. Salivary glands
E. Gastrointestinal motility

7- Which effect is due to parasympathetic stimulation?
A. Dilatation of pupil
B. Relaxation of bronchi
C. Vasodilatation of skeletal muscle blood vessels
D. Erection of hairs
E. Constriction of bronchi

8- Which statement about the sympathetic nervous system is incorrect?
A. Its outflow is from T1 — L2
B. The preganglionic fibers are short
C. The post ganglionic fibers are long
D. The post ganglionic endings secrete epinephrine & norepinephrine which act on adrenergic and precepters
E. The postganglionic fibers secrete Ach which act on nicotinic receptors

9- The Stress response (alarm reaction) of sympathetic nervous system does not cause
A. Increased arterial pressure
B. Increased blood flow to skeletal muscle
C. Increased cellular metabolism throughout the body
D. Increased blood glucose concentration
E. Decreased blood glucose concentration

10- Person is having increased rate & increased force of contraction of heart. It is due to stimulation of:
A. Alpha receptors
B. Beta receptors
C. Nicotinic receptors
D. Muscarinic receptors
E. Acetylcholine receptors

11- The chemical mediator of sympathetic post sweat glands is
A. Epinephrine
B. Norepinephrine
C. Acetylcholine
D. Tyrosine
E. Serotonin

except Palms and soles.

...ganglionic neurons in sympathetic & ...sympathetic stimulation secrete
...drenaline
...epinephrine

Which statement about Epinephrine is Correct
A. ...s vasodilatation of blood vessels
B. Decreases the peripheral resistance & the blood pressure
C. Increases the peripheral resistance & increases the blood pressure more than Nor epinephrine
D. Cardiac output more
E. Decreases glucose metabolism

Epinephrine excites mainly — BOTH α & β
A. Alpha receptors
B. Beta receptors
C. Muscarinic receptors
D. Nicotinic receptors
E. Acetylcholine receptors

Which of the following is the most important mechanism of heat loss from the skin surface at normal room temperature?
A. Radiation
B. Conduction to solid objects
C. Conduction to air
D. Convection
E. Evaporation

16- What is True regarding Interleukin-I, (secreted by macrophages)
A. It stimulates the phagocytosis by leukocytes
B. It stimulates the erythrocytes
C. It is not pyrogen
D. Acts on the Hypothalamus to produce fever
E. It activates the lymphocytes

17- A person is doing labour work in hot summer days (the environment temperature of 95oF). He developed high grade fever of 106 o F, the most likely diagnosis is
A. Fever
B. Frost bite
C. Acclimatization to heat
D. Heat stroke
E. Crisis or ...

18- Physiological changes during acclimatization to heat include
A. Twenty times increase in rate of sweating
B. Decrease in plasma volume
C. Increase loss of salt in sweat
D. Increased loss of salt in urine
E. Increased secretion of aldosterone

19- When body exposed to cold the temperature increased by
A. Vasodilatation of ... blood vessels
B. Sweating
C. Shivering
D. Inhibiting the shivering
E. Inhibiting the sympathetic center

20- Which of the following is most important mechanism of heat loss at very high surrounding temperature?
A. Shivering
B. Sweating
C. Radiation
D. Conduction
E. Convection

21- Which of the following component of circulatory system offers greatest resistance to blood flow?
A. Capillaries
B. Arteries
C. Arterioles
D. Veins
E. Venules

22- Eddy current is the property of
A. Streamline flow
B. Laminar flow
C. Fluid with greater viscosity
D. Turbulent flow
E. It is not the property of fluids

23- The local blood flow of which of the following system is entirely regulated by the nervous system?
A. Blood flow to the cerebral area
B. Coronary circulation
C. Skeletal muscle circulation
D. Pulmonary circulation
E. Cutaneous circulation

24- A 70 Kg man has a heart rate of 70beats/min. His End diastolic volume is 120ml & End systolic volume is 50ml. What will be his cardiac output?
A. 5000ml
B. ...ml
C. ...ml
D. 5200ml
E. Cardiac output cannot be calculated

25- Venous return to the heart depends on all of the factors except
A. Right Atrial pressure
B. Mean systemic filling pressure
C. Cardiac output
D. Left Atrial pressure
E. Resistance to blood flow

Heart + Circulation

Q2 In which of the following conditions there will be a decreased cardiac output?

A. Hypothyroidism
B. Pregnancy
C. Arteriosclerosis
D. Anemia
E. Acute myocardial infarction

Q3 Right ventricular failure leads to

A. Pulmonary edema
B. Reduced systemic arterial pressure
C. Increased concentration of aldosterone in the blood
D. Edema of legs
E. Edema of face

Q4 Stimulation of baroreceptors leads to

A. Increase in blood pressure
B. Increase in heart rate
C. Decrease in blood pressure and decrease in heart rate
D. Increase in blood pressure and decrease in heart rate
E. Increase in blood pressure and increase in heart rate

Q5. Vessels which are not under sympathetic tone are

A. Arterioles
B. Capillaries
C. Veins
D. Not all arteries
E. Large arteries

following conditions may result from the long standing hypertension except:

A. Renal failure
B. Pericardial tamponade
C. Cerebral haemorrhage
D. Myocardial infarction
E. Hypotonia

Q7 Which of the following sets of differences best describes the circumstances in the pulmonary circulation when compared with systemic circulations?

	Pressure	Pulmonary Arterial Pressure
A.	Higher	Higher
B.	Higher	Lower
C.	Lower	Higher
D.	Lower	Lower
E.	Same	Lower

Both the arterial and venous pressures come to equilibrium when flow in the systemic circulation comes at a pressure of 7mmHg and pulse?

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

Immediately after an acute coronary occlusion blood flow ceases in coronary vessels beyond the occlusion except for small amounts of lateral flow from surrounding vessels and results in ischemic necrosis heart muscles. This phenomenon is called:

A. Angina pectoris
B. Atrial fibrillation
C. Cardiac tamponade
D. Myocardial infarction
E. Pericarditis

Q10 Coronary blood flow increases during:

A. Systole
B. Diastole
C. Repolarization of ventricle
D. Depolarization of ventricle
E. None of the above

Q11. Which of the following parts of circulation has highest compliance?

A. Capillaries
B. Large arteries
C. Veins
D. Aorta
E. Muscle arteries

Q12. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock.

Q13. Angiotensin 1 restores the BP by?

A. Arteriolar vasoconstriction
B. Increasing ADH level
C. Increasing thirst
D. Increasing aldosterone level
E. All of the above

Q14. Which is not true regarding second heart sound?

A. Duration of second heart sound is about 0.12 second
B. Vibration produced by sudden closure of semilunar valves
C. Dub is indicative for second heart sound
D. Second heart sound duration is more than first heart sound
E. Audible with the aid with scope

Q15. Which of the following vessel offer greatest resistance to blood flow?

A. Arteries
B. Arterioles
C. Capillaries
D. Venules
E. Veins

Q16. The vasomotor center:

A. Is located in the upper portion of the pons
B. Decreases its sympathetic activity as the blood vessels when blood pressure falls
C. May not be blocked by spinal anesthesia
D. Does not induce vaso-constriction or vaso-dilatation
E. Concerned with caliber of blood vessels & rate of heart beat

Q17. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

Q18. Venous return to the heart is increased by

A. Decreased blood volume
B. Decreased sympathetic tone
C. Increase in contraction of skeletal muscles
D. Increase in negativity of the thoracic pressure from -4 to -8 mm Hg
E. Increase in pressure in right atrium

Q19. Which of the following conditions often occur in compensated hemorrhagic shock?

A. Decreased heart rate
B. Stress relaxation
C. Decreased ADH (hormone) release
D. Decreased absorption of interstitial fluid through capillaries
E. CNS ischemic response

Q20. The percentage of the end diastolic volume which is ejected out in one systole or one stroke is 65%. This is called:

A. Stroke volume
B. Cardiac output
C. Ejection fraction
D. End diastolic volume
E. End systolic volume

AZRA NAHEED MEDICAL COLLEGE LAHORE

Department of Physiology
1ST YEAR MBBS 2013-14
System Test: CIRCULATORY SYSTEM

MULTIPLE CHOICE QUESTIONS (MCQS) Total Marks 20, Time = 20mins
Select Single best answer, all questions carry equal marks.
ROLL #:_____ DATE: 14-05-14

INSTRUCTIONS
1-All objective questions are to be attempted on the paper and returned to the invigilator within 30 mins.
2-Any cutting and overwriting in objective part will not be accepted.

1. **Which of the following increases the plateau level of cardiac output curve?**
   - A. Myocarditis
   - B. Cardiac temponade
   - C. Myocardial infarction
   - D. Mitral stenosis
   - E. **Decreased parasympathetic stimulation of heart**

2. **Total peripheral resistance increases in which of the following?**
   - A. Anemia
   - B. Exercise
   - C. Sympathetic stimulation
   - D. Arteriovenous fistula
   - E. **None of the above**

3. **Regarding systemic vascular resistance, choose the best statement?**
   - A. Is less than the pulmonary vascular resistance
   - B. Directly proportional to the blood flow of an organ
   - C. Is inversely proportional to the viscosity of blood
   - D. **Mainly effects the diastolic blood pressure**
   - E. Is not effected by the sympathetic stimulation

4. **Which of the following would be expected to occur during central nervous system ischemic response?**
   - A. Decreased heart rate
   - B. Increased parasympathetic stimulation
   - C. Decreased total peripheral resistance
   - D. **Enhanced sympathetic stimulation and generalized vasoconstriction**
   - E. Decreased arterial blood pressure

5. **In which of the following conditions there will be a decreased cardiac output?**
   - A. Hyperthyroidism
   - B. Beriberi
   - C. Atrioventricular fistula
   - D. Anemia
   - E. **Acute myocardial infarction** ✓

6. **Right ventricular failure leads to:**
   - A. Pulmonary edema
   - B. Reduced systemic arterial pressure
   - C. Decreased concentration of aldosterone in the blood
   - D. **Edema of feet**
   - E. Edema of face

7. **Which of the following does not cause hypo effective heart?**
   - A. Inhibition of sympathetic nervous excitation of heart
   - B. Coronary artery blockage
   - C. Valvular heart disease
   - D. Cardiac hypoxia
   - E. **Sympathetic stimulation**

8. **Which is not true regarding second heart sound?**
   - A. **Duration of second heart sound is about 0.1 second**
   - B. Vibration produced by sudden closure of semilunar valves
   - C. Dub is indicative for second heart sound
   - D. Second heart sound duration is more than first heart sound
   - E. Audible with the stethoscope

9. **Mean arterial Pressure is?**
   - A. Systolic blood pressure+ Diastolic blood pressure / 2
   - B. It's value is nearer to systolic blood pressure than diastolic blood pressure
   - C. 50% of sum of Systolic and Diastolic blood pressure
   - D. Systolic blood pressure – Diastolic blood pressure
   - E. **1/3 Pulse pressure+ Diastolic blood pressure**

10. **Which of the following structures are not innervated?**
    - A. Arterioles
    - B. Post capillary venules
    - C. Venuoles
    - D. **Pre-capillary sphincters**
    - E. Arteries

11. Both the arterial and venous pressures come to equilibrium when all flow in the systemic circulation ceases at a pressure of 7mmHg and this is called?

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

12. Which of the following parts of circulation has highest compliance?

A. Capillaries
B. Large arteries
C. Veins
D. Aorta
E. Small arteries

13. If coronary artery diameter is reduced by 50% expected reduction in blood flow would be how many times less?

A. 4 times
B. 12 times
C. 64times
D. 16 times
E. 8 times

14. Which statement is correct regarding effects of hypoxia in pulmonary circulation?

A. It causes vasodilatation
B. It causes vasoconstriction
C. Increases pulmonary blood flow
D. Have no effect on pulmonary blood flow
E. None of the above

15. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

16. The compensatory mechanisms in non-progressive shock include all of the following except:

A. Arteriolar constriction
B. Increased heart rate
C. Sympathetic over activity
D. Sludging of small blood vessels
E. Increased level of angiotensin 2

17. Generalized cellular deterioration the following is irreversible shock

A. Failure of Na K pump
B. Depressed mitochondrial activity
C. Increased transcription & transla
D. Decreased glucose uptake
E. Breaking of liposomal membrane

18. Regarding Starling forces, which following tends to decrease capillary rate?

A. Capillary hydrostatic pressure
B. Interstitial hydrostatic pressure
C. Plasma colloidal osmotic pressure
D. Lymphatic pump activity
E. Interstitial colloidal osmotic pressure

19. 35% loss of total blood volume leads to:

A. Compensated shock
B. Progressive shock
C. Irreversible shock
D. No effect on cardiac output & BP
E. None of the above

20. Cardiogenic shock may be due to the follow reasons except:

A. Severe heart valve dysfunction
B. Heart arrhythmias
C. Hypothyroidism
D. Septicemia
E. Myocardial infarction

f the following structures has the slowest conduction of the cardiac action potential?

F. Atrial muscle
G. Anterior intermodal pathway
H. **Atrioventricular bundle fibers**
I. Purkinje fibers
J. Ventricular muscle

A) resting membrane potential of cardiac muscle more negative
B) As the membrane potential increases ie cardiac muscle, intensity of action potential decreases.
C) **The heart becomes flaccid and dilates.**
D) Heart contractility becomes more vigorous.
E) Increases the conduction of cardiac impulse from atria to ventricles through the AV bundle.

Tetanization of heart is prevented by property of,
A) Conductivity
B) Excitability
C) Rhythmicity
D) **Long refractory period**
E) Short refractory period

Cause of refractory period in ventricular muscle is.
A) Slow conduction of action potential.
B) Slow closure of voltage gated potassium channels.
C) **Closure of inactivation gates of sodium channels till RMP.**
D) Calcium influx in plateau phase.

Important histological features in cardiac muscle tissue responsible for excitation-contraction coupling is,
A) Markedly developed ER and triads
B) Well developed T-tubules (More length and volume).
C) Well developed Ryanodine receptors.
D) C and D
E) **Both B and C**

Automaticity is best developed in the cells of SA node because SA nodal tissue has,
A) Na leak channels.
B) Slow calcium channels.
C) Voltage gated fast Na channels.
D) **A and B**
E) B and C

Hyperkalemia causes,

gated fast Na^+ channels

LLEGE LAHORE

epartment of Physiology

1st YEAR MBBS 2012-17

Revision Test: Circulation

QUESTIONS (MCQS) Total Marks 20, Time =20mins

Select Single best answer, all questions carry equal marks.

DATED: 25-05-13

INSTRUCTIONS

1-All objective questions are to be attempted on the paper and returned to the invigilator within 20 minutes..

2-Any cutting and overwriting in objective part will not be accepted.

Q1. Mean arterial Pressure is?

A. Systolic blood pressure+ Diastolic blood pressure / 2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic blood pressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure+ Diastolic blood pressure

Q2. In which of the following conditions there will be a decreased cardiac output?

A. Hyperthyroidism
B. Beriberi
C. Atrioventricular fistula
D. Anemia
E. Acute myocardial infarction

Q3. Right ventricular failure leads to

A. Pulmonary edema
B. Reduced systemic arterial pressure
C. Decreased concentration of aldosterone in the blood
D. Edema of feet
E. Edema of face

Q4. Stimulation of baroreceptors leads to

A. Increase in blood pressure
B. Increase in heart rate
C. Decrease in blood pressure and decrease in heart rate
D. Increase in blood pressure and decrease in heart rate
E. Increase in blood pressure and increase in heart rate

Q5. Vessels which are not under sympathetic tone are

A. Arterioles
B. Capillaries
C. Veins
D. Small arteries
E. Large arteries

Q6.following conditions may result from the long standing Hypertension except:

A. Renal failure
B. Cerebral haemorrhage
C. Retinal haemorrhage
D. Myocardial infarction
E. Hepatitis

Q7. Which of the following sets of differences best describes the hemodynamics of the pulmonary circulation when compared with systemic circulation?

	(Flow)	(Resistance)	(Arterial Pressure)
A.	Higher	Higher	Higher
B.	Higher	Lower	Lower
C.	Lower	Higher	Lower
D.	Lower	Lower	Lower
E.	Same	Lower	Lower

Q8. Both the arterial and venous pressures come to equilibrium when all flow in the systemic circulation ceases at a pressure of 7mmHg and this is called"

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

Q9. Immediately after an acute coronary occlusion blood flow ceases in the coronary vessels beyond the occlusion except for small amounts of collateral flow from surrounding vessels and results in ischemic necrosis of heart muscles. This phenomenon is called:

A. Angina pectoris
B. Atrial fibrillation
C. Cardiac tamponade
D. Myocardial infarction
E. Pericarditis

Q10. Coronary blood flow increases during:

A. Systole
B. Diastole
C. Repolarization of ventricle
D. Depolarization of ventricle
E. None of the above

...oltage gated slow Ca+ channels
C. Voltage gated fast Na+ channels
D. Na-K+ pump
E. Voltage gated fast ...channels

During skeletal muscle contraction the myosin head walks along the actin filament resulting in sliding of actin filament on myosin. This causes:

A. Shortening of A band
B. **Shortening of I band**
C. Lengthening of sarcomere
D. Lengthening of H zone
E. Moving apart of Z lines

Q24. **The actin filament consists of:**

A. F actin strand
B. F actin strand, troponin
C. **Tropomyosin, troponin, F actin**
D. Tropomyosin, troponin, F actin,myosin
E. Titin, myosin, F actin

Q25. **End plate potential is:**

A. Local potential at post synaptic membrane of a neuron
B. Action potential at post synaptic muscle membrane.
C. **Local potential at motor end plate present at neuro-muscular junction**
D. Saltatory potential
E. Receptor potential

Q26. **Multiunit smooth muscle fibers are:**

A. Supplied by many muscle fibers by a single nerve fiber
B. **One muscle fiber supplied independently by one nerve fiber**
C. Contract in response to hormonal stimulation
D. Do not obey the nervous stimulation
E. Are slowly contracting muscles

Q27. **Which of the following is one of the major causes of death after myocardial infarction?**

A. Increased cardiac output
B. Decreased pulmonary interstitial volume
C. **Fibrillation of the heart**
D. Increased cardiac contractility
E. None of the above

Q28. **In skeletal muscle, the major function of the T tubules is thought to be:**

A. A source of acetylcholine
B. A structural support during contraction
C. **A pathway for the inward spread of electrical activity**
D. A calcium sink
E. A pressure release mechanism

Q29. **In smooth muscle the calcium binding protein is:**

A. Troponin
B. Troponin C
C. Actin
D. Tropomyosin
E. Calmodulin

Q30. ECG is a graphical record of:

A. Mechanical activity of heart
B. Electrical activity of heart
C. Closure of valves
D. Contraction and relaxation
E. Systole and diastole

Q31. **Which of the following phases of the cardiac cycle follows immediately after the beginning of the QRS wave?**

A. Isovolumic relaxation
B. Ventricular ejection
C. Atrial systole
D. Diastasis
E. Isovolumic contraction

Q32. **Which of the following events is represented on the ECG?**

A. SA node depolarization
B. AV node depolarization
C. His Bundle depolarization
D. **Atrial muscle depolarization**
E. Atrial repolarization

Q33. **Which cardiac event follows P wave?**

A. **Atrial contraction**
B. Ventricular contraction
C. Atrial filling
D. Ventricular filling
E. Both A & B

Q34. **Increase in P-R interval is due to:**

A. **1st degree heart block**
B. 2nd degree heart block
C. Complete heart block
D. Atrial flutter
E. Cardiac arrest

Q35. **Which of the following events is associated with the first heart sound?**

A. Closing of the aortic valve
B. Inrushing of blood into the ventricles during diastole
C. Beginning of diastole
D. Opening of the A-V valves
E. **Closing of the A-V valves**

Q36. **Rapid upstroke of ventricular action potential is due to:**

A. Voltage gated slow Ca+ channels
B. **Voltage gated fast Na+ channels**
C. Voltage gated K+ channels
D. Na+K+ pump
E. Voltage gated fast Ca+ channels

Q37. Calculate the Cardiac Output if stroke volume is 70 ml and Heart rate is 70/min

A. 1650 ml/min
B. 4550ml/min
C. 4900ml/min
D. 625 0ml/min
E. 7500ml/min

cardiac output = Stroke x Heart volume Rate
= 70 x 70
= 4900

Q38. Resting membrane potential of pace maker cells is?

A. -23 mili volts
B. +15 mili volts
C. -55 mili volts
D. -90 mili volts
E. +35 mili volts

Q39. The AV Nodal delay is basically due to:

A. Thick AV node
B. Insulation between atrial and ventricular syncitia.
C. Presence of transitional fibers, fewer gap junctions and hyperpolarized cells in the node.
D. Its sympathetic innervations.
E. The fact that it is not innervated by parasympathetic nervous system.

Q40. Which of the following is a characteristic of progressive hemorrhagic shock?

A. Increased cardiac contractility
B. Endotoxin release
C. Decreased capillary permeability
D. Increased cell membrane active transport of sodium
E. Tissue alkalosis

Q41. Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock
D. Anaphylactic shock.
E. Cardiogenic shock

Q42. Coronary blood flow increases during:

A. Systol
B. Diastole
C. Repolarization of ventricle
D. Depolarization of ventricle
E. None of the above

Q43. The transpulmonary pressure is:

A. The same as intrapulmonary pressure.
B. Equal to pleural pressure.
C. The difference of pleural and alveolar pressure.
D. The difference of intrathoracic and alveolar pressures
The sum of intrapulmonary and alveolar pressures.

Q44. The oxy hemoglobin dissociation curve during the severe exercise:

A. Shifts to left
B. Shifts to right
C. Does not shift
D. Becomes more steep
E. None of the above

Q45. During acclamitization at high altitude following changes occur except:

A. Pulmonary ventilation increase
B. Cardiac output increase
C. Hemoglobin and RBCs increase
D. Diffusion capacity of lungs decrease
E. Mitochondria in cells increase

Q46. Which of the following group of neurons in the respiratory centre emits repetitive bursts of Inspiratory ramp action potentials?

A. Ventral respiratory group
B. Pneumotaxic centre
C. Apneustic centre
D. Dorsal respiratory group
E. None of the above

Q47. Which of the following volume / capacity is measured by Helium Dilution Method?

A. Tidal volume
B. Expiratory reserve volume
C. Inspiratory reserve volume
D. Functional residual capacity
E. Vital capacity

Q48. FEV1 is characteristically reduced in:

A. Pulmonary edema
B. Respiratory failure
C. Restrictive lung disease
D. Obstructive lung disease
E. Pulmonary fibrosis

Q49. The composition of sweat is modified in tubular part of gland under the effect of Aldosterone as:

A. Na & Cl ions are added
B. Na & Cl ions are absorbed
C. K ion is added
D. K ion is absorbed
E. Both B and C

Q50. Body temperature is regulated by a set point in the:

A. Anterior nucleus of hypothalamus
B. Posterior nucleus of hypothalamus
C. Hypothalamus
D. Preoptic area of hypothalamus
E. None of the above

Pretest –Heart
Viva questions

1. Define cardiac cycle. Give the duration of cardiac cycle.
2. Give two main phases of cardiac cycle.
3. Enumerate the phases in systole.
4. Enumerate the diastole phases.
5. What is protodiastole.
6. What is isovolumetric contraction.
7. What is isovolumetric relaxation.
8. Define incisura.
9. Explain a, c and v waves in JVP.
10. Define proload.
11. Define afterload.
12. Define EDV
13. What is ESV.
14. Define ECG
15. Difference between electrograph and electrocardiogram.
16. Cause of P wave.
17. Cause of QRS wave
18. Cause of T wave
19. What are two segments. Give the causes of segments
20. What are intervals in ECG.
21. Duration of PR interval.
22. Duration of QRS interval
23. Causes of abnormal P wave
24. Causes of broad QRS complex.
25. Causes of short PR interval.
26. What is J point.
27. Give the significance of U wave
28. ECG presentation in MI
29. What is tachycardia
30. Define bradycardia.

31. Define sinus rhythm
32. Define sinus arrhythmia.
33. Define heart blocks.
34. Define first degree heart block.
35. What is complete heart block?
36. What is second degree heart block.
37. What are PVC's
38. What is atrial fibrillation
39. What is ventricular fibrillation.
40. Causes of physiological bradycardia in athletes.
41. What are types of ECG leads
42. What are unipolar leads
43. What are bibolar leads
44. What is Enthiovans law.

If coronary artery diameter is reduced by 50% expected reduction in blood flow would be how many times less?

A. 4 times
B. 12 times
C. 64times
D. 16 times
E. 8 times

Both the arterial and venous pressures come to equilibrium when all flow in the systemic circulation ceases at a pressure of 7mmHg and this is called?

A. Mean systemic filling pressure
B. Mean arterial pressure
C. Mean venous return
D. Equilibrium pressure
E. Mean blood pressure

Which of the following parts of circulation has highest compliance?

A. Capillaries
B. Large arteries
C. Veins
D. Aorta
E. Small arteries

. Which of the following does not cause hypo effective heart?

A. Inhibition of sympathetic nervous excitation of heart
B. Coronary artery blockage
C. Valvular heart disease
D. Cardiac hypoxia
E. Sympathetic stimulation

Loss of vasomotor tone after a history of spinal anesthesia is indicative of:

A. Hypovolemic shock.
B. Neurogenic shock.
C. Septic shock.
D. Anaphylactic shock.
E. Cardiogenic shock

Q14. Which is not true regarding second heart sound?

A. Duration of second heart sound is about 0.11 second
B. Vibration produced by sudden closure of semilunar valves
C. Dub is indicative for second heart sound
D. Second heart sound duration is more than first heart sound
E. Audible with the stethoscope

Mean arterial Pressure is?

A. Systolic blood pressure+ Diastolic blood pressure / 2
B. It's value is nearer to systolic blood pressure than diastolic blood pressure
C. 50% of sum of Systolic and Diastolic blood pressure
D. Systolic blood pressure – Diastolic blood pressure
E. 1/3 Pulse pressure+ Diastolic blood pressure