

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 the nervous pathway of swallowing reflex:

- A. The swallowing center is present in cerebral cortex
B. The afferent nerves involved are 5th and 9th cranial nerve
C. The efferent nerves involved are thoracic nerves
D. The deglutition center is present in mid brain
E. The swallowing center stimulates the respiratory center in modulla

Q2. A patient presented with progressive dysphagia to solids followed by liquids, regurgitation of food that is non-responsive to adequate proton pump inhibitor (PPI) & chest pain. Doctor explained that it is due to failure of lower esophageal sphincter to relax during swallowing. Most likely diagnosis is:

- A. Achalasia
B. Gastritis
C. Peptic ulcer
D. Zollinger Ellison syndrome
E. Celiac disease

Q3. Second year medical students is appearing for viva examination, when the viva starts the stimulation of sympathetic stimulation will result in

- A. Segmental Contraction of proximal colon
B. Increased rate of gastric emptying
C. Relaxation of Pyloric constriction
D. Stimulation of gut motility & secretory activity
E. Inhibition of gut motility & secretory activity

Q4. Motor neurons in the myenteric plexus that stimulate the contraction of visceral smooth muscle in the gastrointestinal tract release:

- A. Acetylcholine
B. Somatostatin
C. Nitric oxide
D. Enkephalins
E. Vasoactive intestinal polypeptide

Q5. Stomach motility and stomach secretion is inhibited by which reflex.

- A. The defecation reflexes
B. The gastrocolic reflex
C. The colono ileal reflex
D. The Intestino-intestinal reflex
E. The Enterogastric reflexes

Q6. A patient is diagnosed to have peptic ulcer. On giving H2 blockers his symptoms are relieved. The H2 blockers decreases the secretion of HCL by:

- A. Neutralizing the acid
B. Blocking the effect of histamine
 C. Inhibiting the effect of acetylcholine
D. Inhibiting the proton pump
E. Reducing the secretion of Gastrin

Q7. HCL secretion is inhibited by:

- A. Somatostatin
 B. Entero- oxyntin
C. High PH
D. Amino acids
E. Acetylcholine

Q8. Defective parietal cells would result in malabsorption of which vitamin?

- A. Vitamin B1
B. Vitamin B2
C. Niacin
 D. Vitamin B12
E. Folic acid.

Q9. Important mixing mechanism in the stomach that is moving peristaltic constrictive ring, combined with upstream squeezing action at pylorus is known as:

- A. Retropulsion
B. Mass movement
C. Haustrations
 D. Peristalsis
E. Segmentation movements

Q10. Which of the following enzyme is secreted in active form

- A. Chymotrypsin
B. Trypsin
C. Pepsin
 D. Amylase
E. Carboxypeptidase

Q11. Which of the following enzyme is released from small intestine:

- A. Trypsin
B. Chymotrypsin
C. Enterokinase
D. Pepsin
 E. Lipase

Q12. Choose the Correct statement about Parasympathetic Stimulation to salivary glands

- A. Inhibits salivary secretion
- B. Produces smaller amount of saliva as compared to sympathetic stimulation
- C. Has no effect on secretion of saliva
- D. Stimulates salivary secretion which is more thick & less watery
- E. Stimulates salivary secretion rich in enzymes

Q13. Which of the following normally prevents the activation of pancreatic enzymes within pancreas?

- A. Storage at an acidic pH within the acinar cells
- B. Storage at a neutral pH within the acinar cells
- C. Tonic secretion of sodium bicarbonate
- D. Secretion of trypsin inhibitor by the acinar cells
- E. Fat in chyme

Q14. The most potent stimulus for pancreatic secretion rich in enzymes is

- A. Cholecystokinin (CCK)
- B. Secretin
- C. Vagal stimulation
- D. Acetylcholin
- E. Histamin

Q15. The liver has no ability to perform which of the following substance.

- A. Synthesis of plasma protein
- B. Activation of vitamin D
- C. Synthesis of gamma globulin
- D. Excretion of cholesterol & bilirubin
- E. Storage of Glycogen fat & Iron

Q16. A patient with Zollinger -Ellison syndrome would be expected to have which of the following changes?

- A. Decreased serum Gastrin levels
- B. Increased serum Insulin levels
- C. Increased absorption of Dietary lipids
- D. Decreased parietal cell mass
- E. Peptic Ulcer disease

Q17. A 10-years-old boy developed malabsorption and nutritional deficiencies. His condition worsens when he uses wheat in his diet excessively. The boy is most likely suffering from:

- A. Celiac disease
- B. Ulcerative colitis
- C. Crohn's disease
- D. Irritable bowel syndrome
- E. Hirschsprung's disease

Q18. Which of the following secretion does not contain any enzyme

- A. Pancreatic Secretions
- B. Salivary secretions
- C. Gastric secretions
- D. Bile
- E. Duodenal secretions

Q19. Which of the following causes conjugated hyperbilirubinemia?

- A. Hemolytic anemia
- B. Reduced bilirubin uptake into hepatocytes
- C. Reduced intracellular (hepatic) protein binding to bilirubin
- D. Biliary obstruction
- E. Pernicious anemia

Q20. A 40-years-old lady is presented to emergency with complaints of right upper quadrant pain and fever. Her lab report shows high white blood cells count. Ultrasound report confirms gallstones. Which one of the following is the most common cause of gallstone?

- A. Decreased absorption of water from bile
- B. Failure of absorption of bile acids from bile
- C. Low cholesterol in the bile
- D. Precipitation of cholesterol in the bile
- E. Consumption of low fat diet

Q21. Which of the following duodenal factor is the most potent stimulant for the release of secretin?

- A. Fat
- B. Carbohydrate
- C. Proteins
- D. Acid
- E. Duodenal distention

Q22. An 18-year-old man with pernicious anemia lacks intrinsic factor, which is necessary for the absorption of cyanocobalamin. Vitamin B12 is absorbed primarily in which portion of the gastrointestinal (GI) tract?

- A. Stomach
- B. Duodenum
- C. Jejunum
- D. Ileum
- E. Colon

Q23. Regarding defecation, which of the following is true?

- A. Causes the internal anal sphincter to contract
- B. Causes the rectum & sigmoid colon to relax
- C. Is initiated by the stimulation of stretch receptors in rectal wall
- D. Is followed by the contraction of external anal sphincter
- E. Is purely an involuntary act

Q24. A 40 years old man visits family physician complaining of severe constipation which is not relieved by laxatives. he was diagnosed a case of megacolon, the cause of megacolon is

- A. Absence of Meissner's Plexus Ilium
- B. Absence of Auerbach's plexus in sigmoid colon
- C. Absence of ganglion cells in sigmoid colon
- D. Failure of absorption of Folic acid
- E. Failure of absorption of fats.

Q25. In case of obstructive jaundice following is the correct answer:

- A. Unconjugated bilirubin will be high in blood
- B. Serum alkaline phosphatase would be raised
- C. There will be no bilirubin in urine
- D. The stool will be of normal color
- E. Urobilinogen will be raised in urine

13. Which of the following is the correct sequence of electron acceptors in ETS for production of ATP?

- (a) Cyt b, c, a, a₃
- (b) Cyt a, a, b, c
- (c) Cyt c, b, a, a₃
- (d) Cyt b, c, a₃, a

14. Cytochrome b is a _____-containing proteins?

- (a) Magnesium
- (b) Sulphur
- (c) Chromium
- (d) Iron

15. How are the components of respiratory chain arranged?

- (a) increasing order of molecular weight
- (b) increasing order of redox potential
- (c) decreasing order of molecular weight
- (d) decreasing order of redox potential

16. Which of the following is the Complex IV of ETC?

- (a) NADH dehydrogenase
- (b) Cytochrome bc₁
- (c) Cytochrome c oxidase
- (d) Succinate dehydrogenase

17. Which of the following terminal cytochromes is responsible for donating electrons to oxygen?

- (a) Cyt b
- (b) Cyt a₃
- (c) Cyt c
- (d) Cyt a₂

18. The number of ATP produced per atom of oxygen consumed when FADH₂ is the electron donor is

- (a) 1.5 ATP
- (b) 3 ATP
- (c) 2.5 ATP
- (d) 4 ATP

19. Which of the following is the inhibitor of Complex III of ETC?

- (a) BAL (mercaprol)
- (b) Antimycin A
- (c) Cyanide
- (d) Malonate

20. Which of the following is a natural uncoupler of Complex V?

- (a) DNP
- (b) Valinomycin
- (c) FCCP
- (d) Thermogenin



Mid module Exam- 2023
2nd YEAR MBBS - MCQs

ENCIRCLE one best answer.

Any cutting or overwriting will not be accepted and no marks will be given even if answer will be correct

<p>1. At which part small intestine joins the stomach?</p> <p>a) Cardiac sphincter <input checked="" type="radio"/> b) Pyloric sphincter c) Ileocecal junction d) Descending colon</p>	<p>2. Intestinal juice is stimulated by which hormone?</p> <p><input checked="" type="radio"/> a) Enterocrinin b) Enteropeptidase c) Alpha amylase d) Phospholipases</p>
<p>3. What is the function of bile salt in the intestine?</p> <p>a) Activator of lipase <input checked="" type="radio"/> b) Emulsifier c) Co-factor for cholesteryl esterase d) Inhibitor of lipid absorption</p>	<p>4. The optimum PH for pancreatic amylase function is</p> <p>a) 6.2 <input checked="" type="radio"/> b) 7.1 c) 4.8 d) 8.0</p>
<p>5. Which of the following glucose transporters is important in fructose transport in the intestine?</p> <p><input checked="" type="radio"/> a) GLUT 5 b) GLUT 3 c) GLUT 4 d) GLUT 7</p>	<p>6. Which enzyme responsible for the breakdown of triglycerides into fatty acids and monoacylglycerol in the intestine?</p> <p><input checked="" type="radio"/> a) Pancreatic lipase b) Lipoprotein lipase c) Hormone-sensitive lipase d) Phospholipase</p>
<p>7. What is the volume of daily secretions of intestinal juice?</p> <p><input checked="" type="radio"/> a) 2L b) 3L c) 4L d) 5L</p>	<p>8. A patient presented with abdominal pain, vomiting and diarrhea on ingestion of milk and milk products. Which of the following is true in this condition?</p> <p><input checked="" type="radio"/> a) There is absence or deficiency in lactase enzyme b) The above symptoms are due to bacterial infection c) It can be due to inactivation of enzyme or gene mutation or aging d) It commonly presents in old age</p>
<p>9. Enterokinase helps in the conversion of</p> <p>a) Lactose to Sucrose <input checked="" type="radio"/> b) Trypsinogen into trypsin c) pepsinogen into pepsin d) Proteins into polypeptide</p>	<p>10. Digestion of proteins begins at the</p> <p>a) mouth <input checked="" type="radio"/> b) stomach c) small intestine d) salivary gland</p>
<p>11. Which of the following gastric cells produce HCL?</p> <p><input checked="" type="radio"/> a) Mucous cells b) Parietal cells c) Chief cells d) Endocrine cells</p>	<p>12. Pancreatic juice is stimulated by the release of</p> <p>a) Secretin b) Cholecystokinin c) Enterokinase <input checked="" type="radio"/> d) Both a and b</p>



SECOND YEAR MBBS
MID MODULE EXAM I- 2023
SEQs

06/03/2023

Total marks: 20

Time Allowed: 35 mins

Q No. 1.

A patient presented with recurrent respiratory tract infection associated with productive cough, thick, sticky mucous along with progressive weight loss and failure to thrive. His skin tastes salty and also has digital clubbing.

- | | |
|---|---|
| a. What is your diagnosis? | 1 |
| b. Which gene is defective? | 1 |
| c. What are the diagnostic lab tests? And explain what causes the thick secretions in this disease? | 3 |

sweat chloride test

Q No. 2

- | | |
|---|---|
| a. What is the composition and pH range of bile? Why is the pH of gall bladder less than freshly secreted bile? | 2 |
| b. Name primary and secondary bile acids with their site of synthesis. | 3 |

Q No. 3

- | | |
|--|-----|
| a. Illustrate the organization of ETC. | 2.5 |
| b. Explain the role of ATP synthase in generation of ATP | 2.5 |

Q no 4.

- | | |
|---|---|
| a. What are inhibitors and uncouplers? | 1 |
| b. State the inhibitors of Complex I and Complex II of ETC. | 4 |

MID MODULAR TEST
MBBS Second Year 2022-23
(Physiology-Subjective)

INSTRUCTIONS
1-All subjective part is to be submitted **within 2:10 minutes**, no extra time will be given.
2-Neat handwriting, use of margins will increase the outlook /presentation of your paper.

ATTEMPT ALL QUESTIONS; ALL QUESTIONS CARRY EQUAL MARKS.

DATED: 28. 2. 2023

TOTAL MARKS = 25

TIME = 1 hour

- Q1 A) Enlist the Hormones of GIT. (2)
B) Compare the effects of sympathetic & parasympathetic stimulation on GIT. (3)
- Q2. A) What is "Gut Brain" What are its components? (2)
B) Compare & Contrast the functions of each components? (3)
- Q3. Name the different stages of swallowing. Explain the series of events which take place during pharyngeal stage of swallowing. (5)
- Q4. A) Which cells produce HCL, describe basic mechanism of HCL secretion in stomach lumen? (2.5)
B) Amir who was taking pain killer for joint pain for 4 years, came to doctor & told that he is having retrosternal burning & epigastric pain after taking meal
a) What is your Diagnosis? (1)
b) What is the cause of this disease? (1)
c) Which factors normally prevent occurrence of this disease? (.5)
- Q5. A) Enumerate the factors that regulate the gastric emptying. (1.5)
B) A student came in emergency & told to doctor that this morning after breakfast he had feeling of heaviness & increase in abdominal pressure & started vomiting.
a) Where vomiting center is located? (1)
b) What is the role of chemoreceptor trigger zone? (1)
c) What is pathway of vomiting reflex? (1.5)

MID MODULE I TEST

MCQs

1st Year MBBS

Total marks: 20

Time Allowed: 20 minutes

29/09/2022

ENCIRCLE the best answer

<p>1 The key regulatory enzyme of heme synthesis is:</p> <p>(a) Ferro chelatase (b) ALA dehydratase (c) Uroporphyrinogen decarboxylase (c) ALA synthase (e) Uroporphyrinogen synthase III</p>	<p>2 Which of the following enzyme-catalyzed reaction of heme synthesis occurs in the cytosol?</p> <p>(a) Coproporphyrinogen oxidase (b) Uroporphyrinogen synthase III (c) Protoporphyrinogen oxidase (d) Ferro chelatase (e) ALA synthase</p>
<p>3 The following are the examples of unconjugated hyperbilirubinemia except</p> <p>(a) Gilbert's syndrome (b) Criglar-Najjar syndrome (c) Sickle cell anemia (c) Dubin Johnson syndrome (e) Hemolytic disease of the newborn</p>	<p>4 Biliverdin is converted to bilirubin by the process of</p> <p>(a) oxidation (b) Decarboxylation (c) Conjugation (d) Dehydrogenation (e) Reduction</p>
<p>5 In which of the following organs does the conjugation of the bilirubin takes place?</p> <p>(a) Kidneys (b) Liver (c) spleen (d) Bone marrow (e) Large intestines</p>	<p>6 Which of the following enzymes are inhibited by lead metal?</p> <p>(a) ALA synthase and Protoporphyrin oxidase (b) ALA dehydratase and Protoporphyrin oxidase (c) ALA synthase and Ferro chelatase (d) ALA dehydratase and Ferro chelatase (e) Uroporphyrinogen synthase III and protoporphyrinogen oxidase</p>
<p>7 Clay colored stool is indicative of</p> <p>(a) Pre-hepatic jaundice (b) Hepatic jaundice (c) Post hepatic jaundice (d) Acute intermittent porphyria (e) Hemolytic disease of the new born</p>	<p>8 The type of porphyria which is autosomal recessive is:</p> <p>(a) Porphyria cutanea tarda (b) Congenital erythropoietic porphyria (c) Variegata porphyria (d) Acute intermittent porphyria (e) Erythropoietic protoporphyria</p>
<p>9 Vitamin B1 coenzyme (TPP) is involved in</p> <p>(a) Transamination (b) Oxidative decarboxylation (c) Carboxylation (d) Hydroxylation (e) Transmethylation</p>	<p>10 Niacin or nicotinic acid is a monocarboxylated derivative of</p> <p>(a) Pyridine (b) Pyrimidine (c) Flavin (d) Adenine (e) Guanine</p>

11 Which of the following statements is incorrect about vitamins

- (a) Vitamin deficiency causes disease
- (b) Excess vitamin intake causes toxicity
- (c) Vitamins contain amino groups
- (d) Vitamins can be produced by plants
- (e) Vitamins can be produced by animals

12 Which of the following vitamins is not correctly matched with the diseases

- (a) Vitamin B3- Pellagra
- (b) Vitamin B12- Pernicious anemia
- (c) Vitamin C-scurvy
- (d) Vitamin A- Night blindness
- (e) Vitamin B6- beri beri

13 Which of the following is caused by deficiency of Vitamin A

- (a) Megaloblastic anemia
- (b) Keratoconus
- (c) Pernicious anemia
- (d) Xerophthalmia
- (e) Myopia

14 Which of the following vitamin is obtained from animal sources only?

- (a) Cyanocobalamin
- (b) Ascorbic acid
- (c) 1,25 dihydroxycholecalciferol
- (d) α tocopherol
- (e) Pyridoxine

15 Loss of sense of vibration, proprioception, anemia and neuropsychiatric symptoms are the features of deficiency of

- (a) Vitamin C
- (b) Iron
- (c) Folic acid
- (d) Vitamin B12
- (e) Calcium

16 Recommended dietary allowance for vitamin A is

- (a) 1000 RAE for males; 900 RAE for females
- (b) 2000 RAE for males; 1000 RAE for females
- (c) 900 RAE for males; 700 RAE for females
- (d) 200 RAE for males; 100 RAE for females
- (e) 4000 RAE for males; 2000 RAE for females

17 Active form of vitamin D is known as

- (a) 25 dihydroxycholecalciferol
- (b) 1,25 dihydroxycholecalciferol
- (c) 7-dehydrocholesterol
- (d) Ergocalciferol
- (e) Calcidiol

18 Regulation of 25 hydroxycholecalciferol 1 hydroxylase enzyme indirectly is by

- (a) Increase in calcium levels
- (b) Decrease in calcium levels
- (c) Increase in phosphate levels
- (d) Decrease in phosphate levels
- (e) Decrease in calcium and phosphate levels

19 In folate trap there is accumulation of

- (a) Dihydrofolate
- (b) Cobalamin
- (c) Cysteine
- (d) Methyl tetrahydro folate
- (e) Methionine

20 Deficiency of vitamin B9 causes

- (a) Microcytic anemia
- (b) Megaloblastic anemia
- (c) Normocytic anemia
- (d) Pernicious anemia
- (e) Aplastic anemia

Anatomy Department, ANMC
Mid Module 1A of 2nd Year MBBS (SEQ's)

1. a) Enlist the contents of rectus sheath. (1.5)
b) A 80 year old male came to surgical OPD with swelling in groin area. The swelling came out particularly on coughing & straining. The patient is able to reduce this swelling, ring occlusion test is positive.
 - iv. What is the patient suffering from? Also give the coverings of this swelling (0.5+2)
 - v. How will you differentiate a direct inguinal hernia from an indirect inguinal hernia? (2)
 - vi. How will you differentiate an inguinal hernia from a femoral hernia (0.5)
2. (a). Draw and label the lymphatic drainage of stomach. (2.5)
b) Write down the visceral relation of second part of duodenum. (2.5)
3. Write down the origin and course of portal vein. Tabulate sites of porto-systemic anastomosis along with contributing vessels. (5)
4. a) Draw and label the visceral surface of liver. (3)
b) Enlist various positions of appendix along with its blood supply. (2)
5. (a). Write down the relations of Head of Pancreas (3)
b) Write a detail note on lesser omentum. (2)

Anatomy Department, ANMC
Mid Module 1A of 2nd Year MBBS (MCQ's)

Name:

Roll No. :

1. The major blood supply to pancreas is from
- A. Inferior pancreaticoduodenal artery
 - B. Superior pancreaticoduodenal artery
 - C. Splenic artery
 - D. Left gastro-epiploic artery
 - E. Right gastro-epiploic artery
2. A midline abdominal incision below the umbilicus passes through?
- A. Pyramidalis
 - B. Linea Alba
 - C. Lumber triangle
 - D. Superficial inguinal ring
 - E. Deep Inguinal ring
3. Which is the most common site for the appendix found at appendicectomy?
- A. Retro-ileal
 - B. Retro-caecal
 - C. Pelvic
 - D. Anterior to terminal ileum
 - E. Below terminal ileum overlying psoas
4. The anterior relations of the THIRD part of the duodenum include:
- A. Hilum of the right kidney
 - B. Bile duct
 - C. Inferior pole of the right kidney
 - D. Superior mesenteric vein
 - E. Portal vein
5. Which of the following forms the posterior wall of the inguinal canal?
- A. Conjoint tendon
 - B. Internal oblique muscle
 - C. Transversus abdominus muscle
 - D. Lacunar ligament
 - E. External oblique muscle
6. The skin around the umbilicus supplied by following spinal segment?
- A. T9
 - B. T10
 - C. T11
 - D. T12
 - E. L1
7. The most dependent region of peritoneal cavity in supine position in females is?
- A. Recto-vesical pouch
 - B. Utero-vesical pouch
 - C. Recto-uterine pouch
 - D. Hepato-renal pouch
 - E. Sub-hepatic recess
8. Which artery is a direct branch of celiac trunk?
- A. Right gastric artery
 - B. Left gastric artery
 - C. Right gastro-duodenal artery
 - D. Left gastro-duodenal artery
 - E. Superior mesenteric artery
9. Incisura angularis is a sharp angulation of stomach, which indicates:
- A. Junction body and fundus of stomach.
 - B. Junction of the body and the pyloric part of stomach.
 - C. Junction of the body and cardiac and of stomach.
 - D. Junction fundus and Pyloric end of stomach.
 - E. Junction of fundus and cardiac end
10. During laparoscopic cholecystectomy, the Calot's triangle is identified to locate one of the following structures present there?
- A. Left hepatic artery
 - B. Proper hepatic artery
 - C. Cystic artery
 - D. Right hepatic artery
 - E. Bile duct
11. At what vertebral level trans-tubercular plane cross the body?
- A. L3
 - B. L4
 - C. L5
 - D. S1
 - E. S2
12. Which of the following structure lies at the apex of sigmoid mesocolon?
- A. Left ureter
 - B. Right common iliac artery
 - C. Right common iliac vein
 - D. Right ureter
 - E. External iliac artery
13. The anatomical left & caudate lobes of the liver are separated by which of the following structures?
- A. Fissure for the round ligament of the liver
 - B. Fissure for the ligamentum venosum

- C. Falciform ligament
- D. Porta hepatis
- E. Lesser omentum

14. The rectal venous plexus in males communicates with?

- A. Vesical venous plexus
- B. Vertebral venous plexus
- C. Prostatic venous plexus
- D. Uterovaginal plexus
- E. Hypogastric plexus

15. The portal vein is formed from confluence of which veins?

- A. Splenic vein and inferior mesenteric vein
- B. Splenic vein and superior mesenteric vein
- C. Splenic vein and gastric vein
- D. Superior mesenteric vein and inferior mesenteric vein
- E. Gastric veins and splenic vein

16. The neuro-vascular plane in anterior abdominal wall lies between?

- A. Superficial fascia and external oblique muscle
- B. Deep fascia and external oblique
- C. External oblique and internal oblique muscle
- D. Internal oblique and transversus abdominis
- E. Transversus abdominis and its fascia

17. A forty year old female presented with gastric ulcer in medical emergency. On ultrasound ulcer was diagnosed on posterior wall. In case of bleeding, blood will pool in?

- A. Greater sac
- B. Lesser sac
- C. Splenic recess
- D. Sub-hepatic recess
- E. Left Sub-phrenic recess

18. The tail of pancreas is located in?

- A. Hepato-duodenal ligament
- B. Lesser omentum
- C. Leino-renal ligament
- D. Phrenico-colic ligament
- E. Gastro-splenic ligament

19. Internal hemorrhoids are dilation of anal cushions?

- A. Above pectinate line
- B. Above Hilton line
- C. Above arcuate line
- D. Below Hilton line

E. Below pectinate line

20. Which of the following is the best incision used for Cholecystectomy?

- A. Right subcostal
- B. Midline
- C. Right paramedian
- D. Transverse
- E. Left paramedian

21. A hernia passes through both superficial and deep inguinal rings and descends lateral to inferior epigastric vessels. It is:

- A. Direct inguinal hernia
- B. Indirect inguinal hernia
- C. Femoral hernia
- D. Umbilical hernia
- E. Para umbilical hernia

22. The structures found in the free border of lesser omentum from anterior to posterior are:

- A. Common Bile Duct, Hepatic artery, portal Vein
- B. Portal Vein, Hepatic Artery, Common Bile Duct
- C. Hepatic Artery, Portal vein, Common Bile Duct
- D. Portal vein, Common Bile Duct, Hepatic Artery
- E. Common bile duct, portal vein, hepatic artery

23. A patient presented in hospital after road traffic accident. The doctor found a fractured left rib on X-Ray. The doctor must look for profuse bleeding because of the rupture of which of the following organs?

- A. Stomach.
- B. Liver.
- C. Left kidney.
- D. Spleen.
- E. Pancreas.

24. The Hepato pancreatic ampulla (Ampulla of Vater) opens via a common duct into:

- A. Proximal Jejunum
- B. Second part of duodenum
- C. Distal Ileum
- D. Ascending colon
- E. Pancreatic duct

25. In case of anal fissure which nerve will be responsible for pain sensation?

- A. superior rectal nerve
- B. Superior hypogastric plexus
- C. Perineal nerve
- D. Pudendal nerve
- E. Posterior sacral nerve

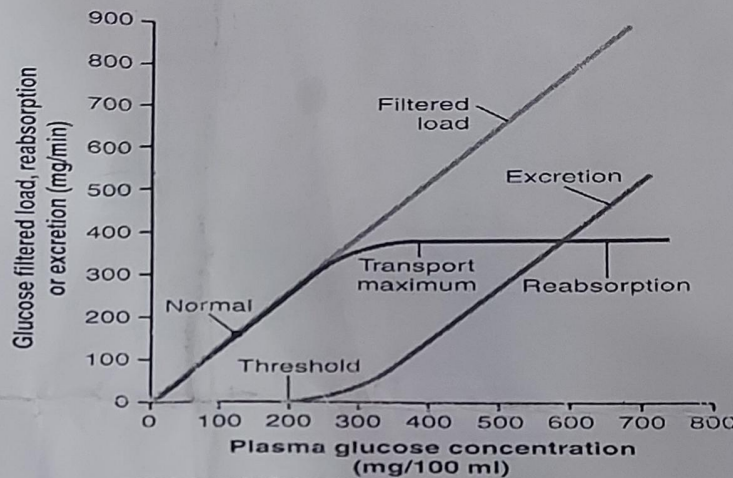
SEQs (SHORT EASSY TYPE QUESTIONS)
 ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

MARKS= 25

DATED: 28-3-2023

TIME = 1 hour & 10 min

- Q1. A) Compare & Contrast the ionic composition of plasma, interstitial fluid & intracellular fluid. (3)
 B) Outline the sources of Input & output in daily water balance. (2)
- Q2.A). Draw Nephron & label its different segments. (2.5)
 B). Compare the cortical and medullary nephrons in kidney. (2.5)



Hall, Guyton and Hall Textbook of Medical Physiology, 12th Edition
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See the graph & answer below question.

- Q3. A) Define Transport maximum, value of transport maximum for Glucose? (1)
 B) Why does glucose appear in urine when exceeds 200mg/dl? (1)
 C) What is difference between term (Transport Maximum) TM & renal threshold? (2)
 D) Give formula for filtered Load & Excretion rate (1)
- Q4. Amina came to doctor & complain of having vomiting, diarrhea, she also reported of very little urine output since 8 hours. On examination B:P is 80/40.
- A) Write Formula, used to calculate the GFR in healthy adult? $GFR = K_f \times \text{Net filtration pressure}$ (2)
 B) How sympathetic stimulation influences the GFR? (1)
 C) What is Filtration fraction? Give its normal value & formula to calculate? (2)
- Q5. A) Amjad is in desert & is dehydrated what different mechanisms will be initiated by the kidney to compensate for this decreased ECF volume? (2)
 B) Describe in detail the counter current multiplier mechanism. (3)

$$\text{Filtered load} :- GFR \times P$$

$$\text{Excretion Rate} = V \times U$$

ANATOMY DEPARTMENT, ANMC

SEQ PAPER EMBRYOLOGY AND HISTOLOGY TEST-1 2ND YR MBBS 2023

1. An infant is born with an abdominal wall defect that is located just to the right of the umbilicus. The protruding viscera are covered by neither amniotic membrane nor parietal peritoneum.
 - a. Name the congenital anomaly. (1)
 - b. Write down the derivatives of fore-gut. (2)
 - c. Write a note on the rotation of the stomach. (2)
2.
 - a) Write a note on the positional changes & innervation of the diaphragm. (2.5)
 - b) What is meckal' diverticulum? Give its embryological basis. (2.5)
3. Draw and label the microscopic picture of body of stomach. (5)
4. Compare and contrast the histological differences between three parts of small intestine in a tabulated form. (5)
5. Write short note on:
 - a) Write down the embryological events occurring in physiological herniation of mid-gut. (2.5)
 - b) What do you understand by:
 - I. Hepatic acinus (2.5)
 - II. Portal lobule

Anatomy Department, ANMC

Total Marks: 50

Time Allowed: 2 Hours

SEQ PAPER FINAL MODULAR ASSESSMENT (GIT & RENAL SYSTEM) 2ND YEAR MBBS May 2023

1. A 40 years old female was brought in surgical emergency with severe pain in right hypochondrium. The pain worsened after taking fatty meal. she was diagnosed with gall stones and cholecystectomy was planned.
 - a) Write down the boundaries and contents of Calot's triangle. (2.5)
 - b) How is the Common bile duct formed? Name its parts (2.5)
2. a) Write down the differences between inguinal and femoral hernia. (2.5)
 - b) Draw and label the lymphatic drainage of stomach. (2.5)
3. a) Write down the relations of rectum in male and female. (3)
 - b) Compare the differences between vascular arcades of jejunum and ileum. (2)
4. Write note on:
 - a) Sigmoid mesocolon (2.5)
 - b) Relations of head of pancreas. (2.5)
5. Draw and label the relations of right kidney. (5)
6. a) What are the sites of constriction of ureter. Give the blood supply & lymphatic drainage of ureter. (2.5)
 - b) Enumerate ligaments of urinary bladder. (2.5)
7. Write down the microscopic features of classic hepatic lobule, portal lobule and hepatic acinus. (5)
8. a) Compare and contrast the proximal and distal convoluted tubule. (5)
 - b) Draw and label the histological structure of urinary bladder. (2.5)
9. A neonate presented in the emergency with projectile vomiting. After investigations, a diagnosis of Hypertrophic pyloric stenosis was made. (2.5)
 - a) What is Hypertrophic pyloric stenosis. Write a note on the rotation of stomach. (3)
 - b) Write down the embryological explanation of annular pancreas. (2)
10. Name the stages of kidney development. Write down the development of permanent kidney (5)

ureter lymphatic drainage: common and internal iliac nodes

1st End Modular Test

Date: 05-5-23

MULTIPLE CHOICE QUESTIONS (MCQS)

Total Marks 45,

Time = 45mins

Select Single best answer, all questions carry equal marks.

NAME: _____ Roll No: _____

INSTRUCTIONS

- 1-All objective questions are to be attempted on the paper and returned to the invigilator within 45 mins
2-Any cutting and overwriting in objective part will not be accepted.

Q1. Parasympathetic stimulation:

- A. Inhibits salivary secretions.
- B. Stimulates salivary secretions, which is more thick.
- C. Produces smaller volume of salivary secretions than sympathetic.
- D. No effect on salivary secretions
- E. Stimulates salivary secretions, rich in enzymes.

Q2. Following is true regarding the nervous pathway of swallowing reflex:

- A. The swallowing center is present in cerebral cortex
- B. The afferent nerves involved are 5th and 9th cranial nerve
- C. The efferent nerves involved are thoracic nerves
- D. The deglutition center is present in mid brain
- E. The swallowing center stimulates the respiratory center in medulla

Q3. A patient having peptic ulcer is treated by Omeprazole. The drug decreases the secretion of H⁺ ion by:

- A. Blocking H₂ receptors
- B. Neutralizing the acid
- C. Inhibiting the proton Pump
- D. Reducing the secretion of gastrin
- E. Inhibiting the effect of acetylcholine

Q4. The moving peristaltic constrictive ring, combined with upstream squeezing action, called

- A. Slow waves
- B. Retropulsion
- C. Propulsion
- D. Regurgitation
- E. Reflex action

Q5. Bile Salts are:

- A. Produced in gall bladder
- B. Essential for digestion of carbohydrates
- C. Major constituent of Pancreatic lipase
- D. Recycled by enterohepatic circulation
- E. Formed by cleavage of hemoglobin

Q6. A 40-year-old man presents with symptoms of upper gastrointestinal discomfort, dysphagia and a non-specific feeling of pressure in the chest. Radiograph findings indicate distention of the lower oesophagus most likely caused by a failure of receptive relaxation of the gastroesophageal sphincter. Which of the following conditions best fits to this description?

- A. Gastroesophageal reflux
- B. Barrett's esophagus
- C. Gastritis
- D. Achalasia or magacosophagus
- E. Hiatus Hernia

Q7. Stomach motility and stomach secretion is inhibited by which reflex

- A. The defecation reflexes
- B. The gastrocolic reflex
- C. The colonoileal reflex
- D. The Intestino-intestinal reflex
- E. The Enterogastric reflexes

Q8. The proenzyme pepsinogen is secreted mainly from which of the following structures?

- A. Epithelial cells of the duodenum
- B. Acinar cells of the pancreas
- C. Gastric glands of the stomach
- D. Ductal cells of the pancreas
- E. Esophagus

Q9. Which of the following is true regarding excitability of smooth muscles?

- A. There is resistance to movement of ions from one muscle cell to the next
- B. These are excited more rapidly along the length of the bundle than sideways
- C. The action potential either does not travel at all or travels the entire length of muscle
- D. Excitation of longitudinal muscle cannot excite the circular muscle layer
- E. When an action potential is elicited in the center of muscle mass, only then it travels in all directions in the muscle

Q24. Which statement about filtration fraction is correct:

- A. Averages about 2
- B. Indicates 50 per cent of the plasma is filtered
- C. Decreases with increased colloidal osmotic pressure
- D. Is equal to Renal plasma flow
- E. Averages about 4

Q25. A young boy is presented to OPD with proteinuria. After diagnosis, nephrologist explained to medical students that an immunological response with abnormal T-cell secretion of cytokine that reduces anions on glomerular capillary membrane & podocytes is the underlying pathophysiology of this condition. What would be the most probable diagnosis of this condition:

- A. Nephrotic syndrome
- B. Nephritic syndrome
- C. Acute glomerulonephritis
- D. Acute pyelonephritis
- E. Minimal change disease

Q26. One person had severe hemorrhage, due to an accident, which is the most likely explanation for decreased GFR.

- A. Release of Bradykinin
- B. Activation of parasympathetic stimulation.
- C. Activation of sympathetic stimulation which constrict renal arteries
- D. Release of prostaglandin
- E. Release of Nitric oxide

Q27. A 60 years old male is diagnosed to have right ureteric obstruction. GFR in this patient will:

- A. Decrease in the both kidney
- B. Decrease in the right kidney
- C. Increase in the right kidney
- D. Increase in the both kidney
- E. Remains same in the right kidney

Q28. ADH dependent water reabsorption takes place from:

- A. Ascending limb of Henle
- B. Proximal tubule
- C. Early distal tubule only
- D. Late distal tubule only
- E. Distal tubule, collecting tubules, and collecting duct epithelia

Q29. The most important primary systems especially involved in regulating the concentration of sodium and osmolarity of extracellular fluid is

- A. The osmoreceptor-ADH system
- B. Thirst mechanism
- C. Renin, Angiotensin II and Aldosterone mechanism
- D. Water balance
- E. Salt-Appetite Mechanism

Q30. Aquaporin which works under the influence of ADH to reabsorb water from the cortical and medullary collecting ducts is:

- A. Aquaporin 1
- B. Aquaporin 2
- C. Aquaporin 3
- D. Aquaporin 4
- E. Aquaporin 5

Q31. Hypercalcemia can lead to

- A. Depressed neuromuscular excitability
- B. Increased neuromuscular excitability
- C. Tetany
- D. No effect on neuromuscular activity
- E. Both A & C

Q32. The only factor by which excretion of Ca^{++} is enhanced is?

- A. Increased plasma phosphate
- B. Increased Blood pressure
- C. Metabolic acidosis
- D. ↓ extracellular fluid volume
- E. ↑ Parathyroid Hormone

Q33. In the renal tubules about 65% of the filtered Na^+ is reabsorbed in:

- A. Ascending limb of loop of Henle
- B. Collecting tubule
- C. Descending limb of loop of Henle
- D. Distal tubule
- E. Proximal tubule

Q34. For estimation of renal plasma flow, which substance is used:

- A. Creatinine
- B. Inulin
- C. Urea
- D. Ammonia
- E. Paraaminohippuric acid

Q35. Strenuous exercise can cause hyperkalemia by:

- A. Changing ECF osmolarity
- B. Causing acid base imbalance
- C. Causing sympathetic stimulation
- D. Releasing potassium from skeletal muscle
- E. Increasing absorption of potassium from intestine

Q36. One of the most important factors that increase potassium secretion by principal cells is:

- A. Increased aldosterone
- B. Decreased tubular flow rate
- C. Increased hydrogen ion concentration
- D. Increased intracellular fluid potassium concentration
- E. Decreased potassium permeability of luminal membrane

Q10. A second-year medical student has acquired stress induced peptic ulcer disease. The most likely contributing factor in response to sympathetic stimulation is:

- A. Decrease in gastric acid secretion
- B. Increase in peristalsis, which decreases transit time of ingested food
- C. Increase in tone of lumen of the gut, which allows corrosive action of ingested food
- D. Psychological stress increases mucous secretion
- E. Increase in HCL secretion from parietal cells

Q11. Which of the following are paired correctly?

- A. Secretin – stimulation of enzymatic release from the pancreatic acinar cells
- B. Cholecystokinin – relaxation of the sphincter of Oddi
- C. Cholecystokinin – decrease pancreatic enzymes secretion
- D. Cholecystokinin – gallbladder relaxation
- E. Secretin – relaxation of the sphincter of Oddi

Q12. Lack or deficiency of ganglion cells in the myenteric plexus in a segment of the sigmoid colon is a feature of:

- A. Crohn's disease.
- B. Ulcerative colitis
- C. Achalasia
- D. Hirschsprung's disease
- E. Celiac disease

Q13. The major factor that protects the duodenal mucosa from damage by gastric acid is:

- A. The endogenous mucosal barrier of the duodenum
- B. Duodenal bicarbonate secretion
- C. Hepatic bicarbonate secretion
- D. Bicarbonate contained in bile
- E. Pancreatic bicarbonate secretion

Q14. The pattern of electrical and motor activity in the gastrointestinal tract during periods of fasting is called:

- A. Basic electrical rhythm
- B. Migrating motor complex
- C. Peristalsis
- D. Segmentation
- E. Hastration

Q15. The most potent way of HCl secretion by Gastrin is:

- A. Directly by acting on a gastric receptor located on the parietal cells
- B. Indirectly through a cyclic AMP
- C. Indirectly through a cyclic GMP
- D. Indirectly through a hypersecretion of insulin
- E. Indirectly via histamine release from enterochromaffin cells

Q16. A 10-years-old boy developed malabsorption and nutritional deficiencies. His condition worsens when he uses wheat in his diet excessively. The boy is most likely suffering from:

- A. Celiac disease
- B. Ulcerative colitis
- C. Crohn's disease
- D. Irritable bowel syndrome
- E. Hirschsprung's disease

Q17. A 40-years-old lady is presented to emergency with complaints of right upper quadrant pain and fever. Her lab report shows high white blood cells count. Ultrasound report confirms gallstones. Which one of the following is the most common cause of gallstone?

- A. Decreased absorption of water from bile
- B. Failure of absorption of bile acids from bile
- C. Low cholesterol in the bile
- D. Precipitation of cholesterol in the bile
- E. Consumption of low fat diet

Q18. Which of the following enzyme is released from small intestine

- A. Trypsin
- B. Chymotrypsin
- C. Enterokinase
- D. Pepsin
- E. Lipase

Q19. Slow waves in the GIT are believed to be initiated by:

- A. I cells
- B. K cells
- C. Parietal cells
- D. Interstitial cells of Cajal
- E. G cells

Q20. In infants, defecation often follows a meal. The cause of colonic contractions in this situation is:

- A. Histamine
- B. The gastrocolic reflex
- C. Increased circulating levels of somatostatin
- D. The enterogastric reflex
- E. Increased circulating levels of CCK

Q21. Patho-physiology of extra-cellular edema includes which of the following:

- A. Hyponatremia
- B. Poor metabolism
- C. Malnutrition
- D. Inflammation of tissues
- E. Failure of the lymphatics

Q22. Due to hyponatremia, brain swelling developed. It results in seizures, coma & finally death because of downward herniation of the brain. His blood sodium levels were:

- A. 115 to 120 mmol/L
- B. 135 to 140 mmol/L
- C. 155 to 170 mmol/L
- D. 185 to 190 mmol/L
- E. 285 to 390 mmol/L

Q23. If GFR increases, proximal tubular reabsorption of salt and water will increase by a process called glomerulotubular balance. Contributions to this process include

- A. An increase in peritubular capillary hydrostatic pressure
- B. A decrease in peritubular sodium concentration
- C. An increase in peritubular oncotic pressure
- D. An increase in proximal tubular flow
- E. An increase in peritubular capillary flow

Q37. Primary active secretion of H^+ ions occurs at following segment of nephron.

- A. Principal cells at proximal tubule
- B. Intercalated cells type A at late distal tubule
- C. Intercalated cells type B at collecting ducts
- D. Principal cells at thick ascending limbs of loop of Henley
- E. Principal cells at collecting ducts

Q38. In all the diseases leading to chronic acidosis the maximum amount of which ion will be present in urine

- A. H^+
- B. HCO_3^-
- C. NH_3
- D. NH_4^+
- E. H_2PO_4

Q39. A young male visits his family physician & complain of breathlessness. His acid base profile will show $PH 7.39$, $PCO_2 55mmHg$, & plasma bicarbonate ion concentration $28 mEq/Liter$. the major compensatory response to this patient's acid base disorder will be

- A. Increased renal bicarbonate ion reabsorption
- B. Decreased renal Hydrogen ion secretion
- C. Hyperventilation
- D. Hypoventilation
- E. Stimulation of respiratory center

Q40. A 45-year-old male visits medicine OPD complaining of increase in urine frequency. On further inquiry, he states that small amount of urine elicits an uncontrollable micturition. What would be the most probable diagnosis of this patient:

- A. Uninhibited neurogenic bladder
- B. Atonic bladder
- C. Automatic bladder
- D. Overflow incontinence
- E. Tabetic bladder

Q41. Regarding K_f in glomerular filtration following statement is true:

- A. It actually measures glomerular filtration rate.
- B. It does not depend upon permeability of filtration membrane
- C. It does not depend upon surface area of filtration membrane
- D. It can increase with increased renal blood flow
- E. It measures total permeability & surface area of filtration membrane

Q42. The counter current multiplier mechanism in the loop of Henle is responsible for producing

- A. Dilute urine
- B. Hyper-osmotic renal medullary interstitium
- C. Hyper-osmotic renal tubular fluid
- D. Hypo-osmotic renal medullary interstitium
- E. Iso-osmotic renal tubular fluid

Q43. Positive Free-water clearance by the kidney means

- A. Only solute water excretion by kidney
- B. When solute-free water is also excreted by the kidneys in addition to solute contained urine
- C. Excess solutes are being removed from the blood by the kidneys no water is excreted
- D. When water is being conserved in the body by the kidney
- E. Equal to excretion of Water & solute.

Q44. Stimulation of thirst center will be there if

- A. \downarrow Plasma osmolarity
- B. \uparrow Blood volume
- C. Blood pressure \uparrow
- D. Angiotensin II \uparrow
- E. Hydration

Q45. A 7-year-old child presented in OPD with swelling of abdomen and feet, weight gain and frothy urine. He was diagnosed with nephrotic syndrome. What will be the underlying cause of edema in this child?

- A. Increased glomerular capillary hydrostatic pressure
- B. Decreased glomerular capillary oncotic pressure
- C. Increased bowman capsules hydrostatic pressure
- D. Decreased bowman capsules oncotic pressure
- E. Increased glomerular capillaries and bowmans capsules oncotic pressure

MARKS= 45
TIME = 1 hour

DATED: 5-5-2023

- Q1. A) What is "Gut Brain" What are its components? (1)
 B) Compare & Contrast the functions of this system? (2)
 C) Give Stimuli for the secretion, Site of secretion & functions of secretin & CCK (2)
- Q2.A. Enumerate the different stages of swallowing. (1)
 B. Explain the series of events which take place during pharyngeal stage of swallowing. (2)
 C. Enumerate the factors that regulate the gastric emptying. (2)
- Q3. A) Enumerate the Types of gland present in stomach. (1)
 B) Which cells are stimulated to produce HCL, describe basic mechanism of its secretion? (3)
 C) What is the role of Gastrin in HCL secretion? (1)
- Q4. A student came in emergency & told to doctor that one day before he had meal from canteen, after that he started feeling heaviness & increase in abdominal pressure, then he started vomiting
- Where vomiting center is located? (1)
 - What is the role of chemoreceptor trigger zone? (1)
 - What is pathway of vomiting reflex? (3)
- Q5. 60 years old man had uncontrolled Diabetes since many years. His Urine examination revealed presence of protein.
- Does Normal urine contain any protein? (0.5)
 - In disease condition which plasma protein appear in urine & why? (2)
 - What is Filtration fraction? Give its normal value & formula to calculate? (2.5)
- Q6.A. What is micturition reflex? Sketch out its neural pathway (2)
 B. A 40 years old man develops micturition abnormality as a result of crush injury to sacral segment of spinal cord which destroy the sensory nerve fibers from the bladder to spinal cord
- Name the micturition abnormality he is likely to have. (1)
 - What are features of this abnormality? (2)
- Q7.A) Draw & label the glomerular capillary membrane. (1)
 B) Define & give formula of GFR also Calculate the Net filtration pressure. (2)
 C) Enlist the factors which increase the GFR? (2)
- Q8.A) What are causes of four categories of acid base imbalance. (1.5)
 B) Describe Bicarbonate buffer system. Why it is important ECF buffer, give at least two reasons to justify your answer. (3.5)
- Q9. A) How kidney regulate the ECF H^+ ion concentration during metabolic acidosis? (3)
 B). Define anion gap. (1)
 C) Write down at least one condition for each case, in which anion gap remain normal and in which it is increased. (1)



SECOND YEAR MBBS
END MODULE EXAM - 2023 (SEQs)

08/05/2023

Total marks: 35
Time Allowed: 2 hours

Q No. 1.

- a. Enumerate the various enzymes which are present in the pancreatic juice along with their functions. How pancreatic secretion is regulated? 3.5
- b. What is achlorhydria? Which disease can produce this condition? Explain the role of Gastrin in digestion. 3.5

Q No. 2

A patient went into shock after road traffic accident. He had pale, clammy skin and shallow rapid breathing. On arterial blood gas analysis; his PH is 6.2; PCO₂ is 55 mm Hg and HCO₃⁻ is 32.

- a. What type of acid base disorder is most likely present in this condition? 1
- b. What is anion gap? Write down its equation. 2
- c. Enlist TWO causes of high anion gap metabolic acidosis and TWO causes of normal anion gap metabolic acidosis. 4

Q No. 3

- a. Draw electron transport chain and explain the site of synthesis of ATP. Mention the uncouplers of electron transport chain. 2
- b. A 2 years old child accidentally took cyanide and was brought to emergency in the state of coma. What is the effect of this poison on the mitochondrial respiration? 5

Q no 4.

- a. Enumerate the rate regulatory steps of glycolysis and gluconeogenesis. 2.5
- b. Write down the steps of TCA cycle with enzymes and cofactors. How many ATPs are generated during the TCA cycle? 4.5

Q No. 5

- a. Describe the steps of glycogenolysis with enzymes and cofactors. How glycogen metabolism is regulated. 3.5
- b. Explain the role of HMP shunt in maintaining the integrity of erythrocytes membrane. What are the consequences of glucose-6-PO₄ dehydrogenase deficiency? 3.5

Anatomy Department, ANMC
2nd Year MBBS Mid-Module 2A

Date: 22nd May 2023

Time Alloed: 1 Hour

SEQ

- 1) A 22 years old woman who recently delivered a baby girl, presented to her gynecologist with complaint of urine coming out of vaginal opening during micturation.
 - a) What happened to lady? (0.5)
 - b) Explain the ligamentous support of uterus? (3)
 - c) Enumerate branches of internal iliac artery? (1.5)
- 2)
 - a) What is a hydrocoele? (1)
 - b) Enumerate the coverings of testes. (1)
 - c) Write a brief note on perineal body. (3)
- 3) Write a note on the development of Testis (5)
- 4)
 - a). Draw & label the histological structure of endometrium of uterus in Proliferative phase (3)
 - b). Write a note on the histology of Uterine tube (2)
- 5) Give the Anatomy of Ischioanal fossa (5)

Name:

Time Allowed: 25 Minutes

Roll No.:

- Which zone of prostate is most associated with prostatic carcinoma?
 - transitional
 - central
 - peripheral
 - fibromuscular stroma
 - median
- Where do gonadal arteries arise from?
 - abdominal aorta
 - renal artery
 - pubic artery
 - inferior epigastric artery
 - internal iliac artery
- The structure which separates the seminal vesicle from the rectum is?
 - rectouterine pouch
 - pouch of Douglas
 - rectovesical pouch
 - paracolic gutter
 - retropubic space
- From the following anatomical structures, which one forms the passage for the ductus deferens?
 - urogenital hiatus
 - femoral canal
 - inguinal canal
 - lesser sciatic foramen
 - retropubic space
- The left testicular vein drains into which vein?
 - inferior vena cava
 - common iliac vein
 - left renal vein
 - external iliac vein
 - internal iliac vein
- One statement is true about the Perineal body. It :
 - is a derivative of perineal membrane
 - is present in deep perineal pouch
 - gives attachment to perineal muscles
 - is rudimentary
 - is absent in females
- The zone of prostate most liable to develop benign prostatic hypertrophy (BPH) is:
 - transitional zone
 - central zone
 - isthmus
 - peripheral zone
- capsule of gland
- A woman experienced a difficult labour because the anteroposterior diameter of her superior pelvic aperture was short & the transverse diameter was long. This type of pelvis is called:
 - Android
 - Gynaecoid
 - Anthropoid
 - Platypelloid
 - piriform
- Culdocentesis is a procedure in which an incision is made in the posterior part of vaginal fornix to drain abscess from:
 - Ischioanal fossa
 - Pararectal fossa
 - Rectouterine pouch (Pouch of Douglas)
 - Supravesical fossa
 - Vesico-uterine pouch
- Which of following structure exits pelvis via greater sciatic foramen and re-enters via lesser sciatic foramen?
 - Iliolumbar artery
 - Inferior gluteal artery
 - Internal pudendal artery
 - Superior gluteal artery
 - Superior rectal artery
- The Muscle that is a part of urogenital diaphragm, is:
 - Levator ani
 - Sphincter urethrae
 - Sphincter vesicae
 - Obturator internus
 - Ischiocavernosus
- Traumatic rupture of penile urethra, just distal to perineal membrane can cause the urine to extravasate into one of the following:
 - Rectovesical pouch
 - Deep perineal pouch
 - Anal canal
 - Anterior abdominal wall
 - pouch of Douglas
- Which statement is true regarding the urogenital diaphragm?
 - It is called superficial perineal pouch
 - It contains seminal glands
 - Membranous part of urethra passes through it
 - The perineal membrane does not take part in its formation

- c) It encloses the root of penis in male
14. Which muscles take part in forming the pelvic floor :
- Obturator internus
 - Quadratus lumborum
 - Psoas major and minor
 - Levatorani and coccygeus
 - External and internal oblique
15. One of the following are the contents of deep perineal pouch:
- Bulbospongiosus
 - Membranous part of urethra
 - Superficial transverse perineal muscle
 - Ischiocavernosus
 - Branches of pudendal nerve
16. Endometrial glands become very tortuous (acquire the shape of cork-screw in):
- Proliferative phase
 - Secretory phase
 - Menstrual phase
 - Ovulatory phase
 - Prophase
17. Which stage of the follicle is characterized by a surrounding of flattened (squamous) follicular cells?
- Primordial follicle
 - Primary follicle
 - Secondary follicle
 - Mature follicle
 - Graffian follicle
18. The epithelium of vas deferens is:
- Simple columnar
 - Stratified cuboidal
 - stratified columnar
 - Transitional
 - Pseudostratified columnar with stereocilia
19. The largest spermatogenic cells are:
- Secondary spermatocytes
 - Primary spermatocytes
 - Spermatids
 - Type A spermatogonia
 - Type B spermatogonia
20. Blood-testis barrier is formed by:
- Sertoli cells
 - spermatids
 - Secondary spermatocytes
 - Leydig cells
 - Primary spermatocytes
21. The Y chromosome carries a gene on its short arm that codes for:
- testosterone
 - testes-determining factor (TDF)
 - Mullerian Inhibitory Factor (MIF)
 - progesterone
 - estrogen
22. A baby boy was diagnosed as a case of cryptorchidism. One of the features in this condition are:
- Is present in 50% of premature male infants
 - The testis is histologically abnormal
 - Cryptorchid testis are most commonly in the abdomen
 - Cause is the excess production of estrogen
 - If uncorrected may produce germ cell tumours
23. The true statement about the development of uterus is:
- Cervix develops from the sinuvaginal bulbs
 - Upper part of the body of uterus is formed by uterovaginal primordium
 - Fundus is formed by incorporation of the vertical part of uterine tubes
 - Superior part of vagina develops from urogenital sinus
 - Endometrial stroma develops from surrounding mesenchyme
24. One of the following is a true statement regarding the Primordial germ cells:
- Are derived from hypoblast
 - Develop from endoderm of caudal part of dorsal wall of yolk sac
 - Give rise to theca cells of ovary
 - Give to interstitial cells of Leydig in the testis
 - Concerned with spermatogenesis in intra-uterine life
25. The correct statement about the development of testis is:
- Coelomic epithelium develops into primordial germ cells
 - Cells at the hilum of developing testis degenerate
 - The cortical part of the sex cords develop into rete testis
 - Tubules of metanephros develop into efferent ductules
 - Sertoli cells secrete anti-Mullerian hormone that suppress paramesonephric duct

**AZRA NAHEED MEDICAL
COLLEGE LAHORE**

2ND YEAR MBBS 2022-2023

(Physiology)

Vid Modular Test: Reproduction

MULTIPLE CHOICE QUESTIONS (MCQS)

Q1. The multiple changes that activate the sperm for final process of fertilization is called

- A. Maturation of sperm
- B. Spermatogenesis
- C. Spermeiogenesis
- D. Acrosome reaction
- E. Capacitation

Q2. During spermatogenesis, 46 chromosomes are divided, so that 23 chromosomes go in to each

- A. Spermatid
- B. Spermatogonia
- C. Spermatocytes
- D. Secondary spermatocytes
- E. Primary spermatocytes

Q3. During Intrauterine life lack of testosterone in genetically male fetus leads to:

- A. Small testes
- B. Both male and female genitalia
- C. Development of female sex organs
- D. Testicular Hyperplasia
- E. Ectopic testes

Q4. A 26 years old man with Klinefelter syndrome has seminiferous tubule dysgenesis. Which of the following is function of Sertoli cells in seminiferous tubules?

- A. Secretion of FSH into tubular Lumen
- B. Secretion of testosterone into tubular Lumen
- C. Maintenance of blood testicular barrier
- D. Secretion of Progesterone
- E. Secretion of Estrogen

Q5. The person is likely to be infertile if sperm count falls below

- A. 2 million
- B. 10 million
- C. 20 million
- D. 30 million
- E. 1 million

Select Single best answer, all questions carry equal marks.

Total Marks: 20 Dated: 30-05-2023

NAME: _____ ROLL #: _____

INSTRUCTIONS

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

Q6. The prostatic fluid enhances the motility & fertility of sperm as prostatic fluid is

- A. Thin
- B. Contain Phosphate ions
- C. Contains Ca ions
- D. Acidic
- E. Alkaline

Q7. Fructose is source of energy for spermatozoa is found primarily in secretions from the

- A. Testes
- B. Epididymis
- C. Prostate
- D. Seminal vesicles
- E. Bulbourethral glands

Q8. The young adult came to doctor & who was married 4 years back but still having no child, On investigation his wife is normal, he also told that he had mumps when he was child

In your opinion what is the most probable reason for male infertility

- A. Seminiferous tubular epithelium is destroyed
- B. Excessive temperature of the testes
- C. Decreased temperature
- D. Undescended testes
- E. Abnormal sperm formed

Q9. The anterior pituitary hormone responsible for the development of ovarian follicles prior to ovulation is

- A. Chorionic gonadotropin (hCG)
- B. Estradiol
- C. Follicle stimulating hormone (FSH)
- D. Luteinizing hormone (LH)
- E. Progesterone

Q10. The main mode of action of contraceptive pills is

- A. Prevent ovulation by suppressing LH surge
- B. Prevent implantation of fertilized ovum
- C. Prevent the fertilization
- D. Causes abortion
- E. By decreasing GnRH from Hypothalamus

Q11. Assuming the regular menstrual cycle of 28-30 days, ovulation would be expected to occur between

- A. 6-8 days
- B. 10-12 days
- C. 14-16 days
- D. 20-22 days
- E. 22-24 days

Q12. Menstrual bleeding results because of

- A. Prostaglandins
- B. Involution of corpus luteum & decreased secretion of estrogen & progesterone.
- C. Thickening of endometrium
- D. Proliferative phase of endometrium
- E. Secretory phase of endometrium

Q13. A woman who had repeated abortions before now is pregnant again, the doctor gave her progesterone therapy because it

- A. Increases uterine contractions
- B. Decreases the frequency & intensity of uterine contractions
- C. Decrease the endometrial secretions.
- D. Causes expulsion of implanted ovum
- E. Increase the endometrial secretions.

Q14. Salma was married 3 years back but still has no baby, the doctor asked her to maintain the body temperature chart throughout the cycle. ovulation will be indicated if body temperature is

- A. Decreased
- B. Increased just after menstruation
- C. Increased during later half of the cycle
- D. No change in temperature
- E. Decreased in follicular phase

Q15. In an experiment group of researchers destroyed significant portion of hypothalamus in a lab animal. Destruction of Hypothalamus will increase

- A. Cortisol
- B. Vasopressin
- C. Somatomedin C
- D. Prolactin
- E. Thyroxin

Q16. Suppression of lactation during pregnancy occurs due to?

- A. Low fetal adrenal esteriod.
- B. Low prolactin level
- C. High estrogen & progesterone.
- D. Suppression of maternal pituitary
- E. Low estrogen & progesteron

Q17. What is the most common cause of respiratory distress syndrome in neonates born at 7 months' gestation?

- A. Pulmonary edema due to pulmonary arterial hypertension
- B. Formation of a hyaline membrane over the alveolar surface
- C. Failure of the alveolar lining to form adequate amounts of surfactant
- D. Excessive permeability of the alveolar membrane to water
- E. Decreased permeability of the alveolar membrane to water.

Q18. A young Female who is seven month pregnant, her respiratory rate is increased than normal, what is most probable reason

- A. Increased Estrogen
- B. Increased progesterone
- C. Increased Prolactin
- D. Increased O₂ concentration
- E. Decreased Co₂ concentration

Q19. In lactating mothers Oxytocin causes?

- A. Production of milk
- B. Contraction of myoepithelial cells
- C. Development of ductal system
- D. Development of alveolar system
- E. Inhibition of milk secretion

Q20. After birth the changes occur in fetal circulation, the low right atrial pressure & high left atrial pressure, is produced which causes the blood to flow backward & lead to closure of

- A. Ductus arteriosus
- B. Ductus venosus
- C. Foramen ovale
- D. Umbilical artery
- E. Umbilical vein

TEST: REPRODUCTIVE SYSTEM

DATED: 30.5.23

INSTRUCTIONS

- 1-All subjective part is to be submitted within 40 minutes, no extra time will be given.
2-Neat handwriting, use of margins will increase the outlook /presentation of your paper.

SUBJECTIVE PART (SEQs)

TOTAL MARKS: 30

ATTEMPT ALL QUESTIONS; ALL QUESTIONS CARRY EQUAL MARKS.

- Q1. a) Give the Functions of testosterone before birth & after puberty. (2.5)
b) Define "Cryptorchidism" give its causes. (2.5)
- Q2. a) Enlist the hormones which stimulate the spermatogenesis. (2)
b) Write down the steps of spermatogenesis. (3)
- Q3. a) Draw and label ENDOMETRIAL CYCLE in correlation with OVARIAN CYCLE. (3)
b) Describe mechanism of ovulation. (2)
- Q4. a) Enlist all the hormones produced by placenta. (1.5)
b) Give the functions of Human Chorionic gonadotropin hormone. (1.5)
c) Explain double Bohr effect regarding Respiratory function of Placenta. (2)
- Q5. One Female 28 years old came to Doctor, she told that she was married "3" years back but still had no child. She told that she had normal menstrual cycle of 28 days.
On urine examination one week before menstruation = No pregnanediol
Body temperature chart was maintained, it showed that =No rise in body temperature during menstrual cycle.
- a) In your opinion what is the most probable cause of infertility in this female? (2)
b) What is the pathophysiology of this cause? (1.5)
c) What are any other two causes of infertility? (1.5)
- Q6. a) Draw feedback regulation of Hypothalamic- pituitary ovarian axis in female. (2.5)
b) Give comparison between functions of estrogen & progesterone. (2.5)

Total marks:	20 marks
Time Allowed:	1 hour

Q No. 1

- a. A 45 years old male presented to Emergency department with the complaints of pulsating headaches, nausea and vomiting. On examination he has palpable mass in the abdomen, increased heart rate and diaphoresis. His BP is 250/120mmHg and BSR 400mg/dl. He was diagnosed as case of pheochromocytoma.
What is the underlying mechanism of this disease?
- b. Name the catecholamines. How are they degraded in the body?

Q No. 2

- a. Tyrosine is a non-essential amino acid. How is it formed in the body?
- b. Write down the significant biological compounds formed by tyrosine.
- c. Name the disease and enzyme responsible in a patient who is extremely fair in complexion and has white hair, eyebrows and eyelashes and suffers from photophobia. Which pigment is deficient in them?

Q No. 3

- a. Define Transamination and Deamination. Give one example of each.
- b. Name the enzyme deficient in ALKAPTONURIA and PHENYLKETONURIA?

Q no 4

- a. Enumerate the cytosolic steps of the urea cycle.
- b. Write down the differences between Carbamoyl Phosphate Synthetase I and II?

Anatomy Department
Substage 1 Neuroanatomy

1. Draw and label cross-section of medulla at the level of superior part of inferior olivary nucleus? (5)
2. A) What is facial colliculus?(1)
B) Write down the names of cranial nerves in a proper sequence.(1.5)
C) Name the nerves passing through the jugular foramen. Also mention their nuclei.(2.5)
3. a) Enumerate paired and unpaired dural venous sinuses? (2) name and location of
b) write a detailed note on cavernous sinus? (3)
4. A patient presented in emergency with burnt hand, she was unaware of the burn until she smelled the burning skin.
a) Name the tract that was damaged. Also name the sensory tracts of spinal cord.(0.5+1)
b) Write the effects of damage to nuclei of anterior horn of spinal cord.(1)
c) Tabulate the differences between upper motor neuron lesion and lower motor neuron lesion(2.5)

Total Marks: 10
Time Allowed: 20 minutes

Q No. 1.

A young woman was brought to the emergency room in a comatose state. Blood pressure is 100/50 mmHg, heart rate 120 beats/min, respiratory rate 18/min, and his temperature is 99°F (37.2°C). Her attendant said that she took sleeping pills at night. An arterial blood sample yields the following values: pH = 6.90, $\text{HCO}_3^- = 13$ meq/liter, $\text{PaCO}_2 = 45$ mmHg.

- What Acid-Base imbalance is this patient suffering from?
- What is the underline mechanism of this Acid-Base imbalance?

metabolic acidosis

Q No. 2.

- Write down Henderson-Hassel Balch equation and explain it's applications.
- How bicarbonate buffer system works to maintain normal body pH?

MID MODULE EXAM II - 2023
SECOND YEAR MBBS - MCQs

15/06/2023

Total marks: 10
Time Allowed: 15 minutes

Circle the best answer

<p>1 The pH of the body fluids is stabilized by buffer systems. Which of the following compounds is the most effective buffer system at physiological pH?</p> <p><input checked="" type="radio"/> (a) Bicarbonate buffer system (b) Phosphate buffer system (c) Protein buffer system (d) Hemoglobin buffer system</p>	<p>2 The greatest buffering capacity at physiological pH would be provided by a protein rich in which of the following amino acids?</p> <p>(a) Lysine <input checked="" type="radio"/> (b) Histidine (c) Aspartic acid (d) Leucine</p>
<p>3 Which out of the following conditions will NOT cause respiratory alkalosis?</p> <p>(a) Fever (b) Anxiety <input checked="" type="radio"/> (c) Laryngeal obstruction (d) Salicylate toxicity</p>	<p>4 All are true about metabolic alkalosis except one</p> <p>(a) Can be caused due to Primary hyperaldosteronism (b) Associated with decreased ionic calcium concentration <input checked="" type="radio"/> (c) Associated with hyperkalemia (d) Can be caused due to Renin secreting tumor</p>
<p>5 Prolonged diarrhea will result in</p> <p><input checked="" type="radio"/> (a) Metabolic acidosis (b) Respiratory alkalosis (c) Metabolic alkalosis (d) Respiratory acidosis</p>	<p>6 Diagnostic finding of metabolic alkalosis is</p> <p>(a) $\text{pH} > 7.4$ (b) $\text{PCO}_2 < 40$ (c) $\text{PCO}_2 > 40$ <input checked="" type="radio"/> (d) $\text{HCO}_3^- > 24$</p>
<p>7 Causes of metabolic alkalosis include all the following except.</p> <p>(a) Gastric aspiration (b) Milk alkali syndrome <input checked="" type="radio"/> (c) Diabetic ketoacidosis (d) Recurrent vomiting.</p>	<p>8 A medical student started nervously hyperventilating and fainted when he was unable to attempt the question paper. If his blood is drawn and analyzed the expected results would be:</p> <p>(a) Elevated pH, elevated pCO_2 <input checked="" type="radio"/> (b) Elevated pH, decreased pCO_2 (c) Decreased pH, decreased pCO_2 (d) Decreased pH and no effect on pCO_2</p>
<p>Causes of increased anion gap metabolic acidosis is</p> <p>(a) Isoniazid (b) Methanol <input checked="" type="radio"/> (c) Renal tubular acidosis (d) Uremia</p>	<p>10 Carbonic anhydrase is present at all places except</p> <p>(a) Gastric parietal cells (b) Red blood cells (c) Renal tubular cells <input checked="" type="radio"/> (d) Plasma</p>

except



Name: _____

Roll No: _____

Marks obtained: _____

Marks: 20, Time: 20 min.

ENCIRCLE ONE BEST ANSWER.

Any cutting or overwriting will not be accepted, **NO MARKS** will be awarded even if the answer is correct.

<p>1 α-oxidation of fatty acids occurs mainly in:</p> <p><input type="radio"/> (a) Brain <input type="radio"/> (b) Muscles <input type="radio"/> (c) Liver <input type="radio"/> (d) Adipose tissue</p>	<p>2 Activation of fatty acids requires all of the following except:</p> <p>(a) ATP (b) Coenzyme A (c) Thiokinase <input checked="" type="radio"/> (d) Carnitine</p>
<p>3 Atorvastatin, a cholesterol lowering drug is a:</p> <p>(a) Competitive inhibitor of acetyl-SCoA carboxylase (b) Competitive inhibitor of acetyl-SCoA dehydrogenase (c) Competitive inhibitor of HMG-SCoA synthetase <input checked="" type="radio"/> (d) Competitive inhibitor of HMG-SCoA reductase</p>	<p>4 The metabolic function of LDL includes:</p> <p>(a) To catabolize cholesterol in the tissues and adipose tissue (b) To synthesize apo-protein B-48 in chylomicrons (c) To transport cholesterol from peripheral tissues to liver <input checked="" type="radio"/> (d) To transport cholesterol from liver to peripheral tissues</p>
<p>5 As for the density of lipoproteins is considered, which one is the correct order from lowest to highest density?</p> <p>(a) LDL, VLDL, HDL, Chylomicrons (b) VLDL, LDL, IDL, HDL <input checked="" type="radio"/> (c) Chylomicrons, VLDL, LDL, HDL (d) Chylomicrons, LDL, VLDL, HDL</p>	<p>6 Most of the reducing equivalents (NADPH+H⁺) utilized for the synthesis of fatty acids are generated from:</p> <p>(a) Glycolysis <input checked="" type="radio"/> (b) HMP shunt (c) Gluconeogenesis (d) Citric acid cycle</p>
<p>7 Hepatic lipogenesis is stimulated by:</p> <p>(a) Epinephrine (b) Glucagon <input checked="" type="radio"/> (c) Insulin (d) cAMP</p>	<p>8 Which of the following enzyme is absent in liver:</p> <p><input checked="" type="radio"/> (a) Thiophorase (b) Glycogen synthase (c) Phosphatase (d) Phosphorylase</p>
<p>9 Cholesterol is the precursor of all the followings except:</p> <p>(a) Androstenedione (b) Estrone <input checked="" type="radio"/> (c) Phenylbutazone (d) Testosterone</p>	<p>10 ω (omega)oxidation of fatty acids will yield:</p> <p>(a) Palmityl-SCoA (b) Succinyl-SCoA <input checked="" type="radio"/> (c) Dicarboxylic acids (d) Lecithin</p>

<p>11 Regulatory enzyme of Cholesterol biosynthesis is:</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> (a) HMG-SCoA reductase (b) HMG-SCoA synthase (c) HMG-SCoA isomerase (d) HMG-SCoA decarboxylase 	<p>12 Adipose tissues are unable to synthesize glycerol-3-PO₄ due to absence of:</p> <ul style="list-style-type: none"> (a) Glycerol phosphatase (b) Glycerol dehydrogenase <input checked="" type="radio"/> (c) Glycerol kinase (d) Glycerol oxidase
<p>13 Which of the following fatty acids are dependent on carnitine shuttle to enter into the mitochondria?</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> (a) Long chain fatty acids (b) Glycogen (c) Short chain fatty acids (d) Both short and medium chain fatty acids 	<p>14 The 14 carbon chain fatty acid undergoes complete B-oxidation. How many B-oxidation cycles will be completed and how many acetyl SCoA molecules will be liberated?</p> <ul style="list-style-type: none"> (a) 7 cycles and 8 acetyl SCoA <input checked="" type="radio"/> (b) 6 cycles and 7 acetyl SCoA (c) 5 cycles and 6 acetyl SCoA (d) 4 cycles and 5 acetyl SCoA
<p>15 Maximum amount of cholesterol is found in:</p> <ul style="list-style-type: none"> (a) Chylomicrons (b) VLDL <input checked="" type="radio"/> (c) LDL (d) HDL 	<p>16 Secondary bile acids are synthesized in:</p> <ul style="list-style-type: none"> (a) Liver <input checked="" type="radio"/> (b) Intestine (c) Lungs (d) Stomach
<p>17 The most significant source of stored energy is:</p> <ul style="list-style-type: none"> (a) Liver glycogen (b) Muscle protein (c) Liver proteins <input checked="" type="radio"/> (d) Adipose tissue 	<p>18 All of the following statements about ketone bodies are true except:</p> <ul style="list-style-type: none"> (a) These are synthesized in mitochondria <input checked="" type="radio"/> (b) These can be oxidized in liver to provide energy (c) These can deplete alkali reserve in the body (d) Their synthesis is increased in diabetes mellitus
<p>19 End product of β-oxidation of odd chain carbon fatty acid will be:</p> <ul style="list-style-type: none"> (a) Acetoacetyl-SCoA (b) Acetyl-SCoA <input checked="" type="radio"/> (c) Propionyl- SCoA (d) Succinyl- SCoA 	<p>20 Lipoprotein lipase hydrolyzes:</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> (a) Triacylglycerol present in chylomicrons (b) Methyl Malonyl SCoA to Succinyl SCoA (c) PGH₂ to PGI₂ (d) PGE₂ to PGF₂



MID MODULE EXAM II- 2023
SECOND YEAR MBBS
LIPID METABOLISM – SEQs

17/07/2023

Total marks: 20
Time Allowed: 35 mins

Q No. 1.

- a. How do long chain fatty acids enter the mitochondria for β -oxidation. Explain with the help of diagram. 2
- b. A child comes to you with c/o muscle aches, weakness especially after playing for a long and has not taken his breakfast. On lab examination there is myoglobinuria and biopsy shows elevated muscle TAGs. 3
- What is the most probable cause of this condition and what is the differential diagnosis?

myopathic cpt deficiency

Q No. 2

- a. How does oxidation of PUFA take place? 3
- b. What is the fate of Propionyl CoA? 2

Q No. 3

- a. What is the role of Fatty acid synthase? 2
- b. Name primary and secondary bile acids. How primary bile acids are synthesized? 1+2

Q no 4.

- a. What are TAGs? How are they synthesized in our body? 2
- b. How is cholesterol synthesized and regulated? 4

MID MODULAR TEST; CNS 1 (2B)

SEQs (SHORT EASSY TYPE QUESTIONS)
ATTEMPT ALL QUESTIONS.ALL QUESTIONS CARRY EQUAL MARKS.

MARKS= 25
TIME=1 hour

DATED: 20-07 -2023

- Q1. A forty years old male is brought to emergency department following road side accident. The attending doctor finds loss of fine touch, pressure, and vibration sensation in the left leg, while the sensation of pain, crude touch, hot & cold are intact in left leg.
- Which tract is damaged? (1.5)
 - What is spatial orientation of nerve fibers in the affected tract? (1.5)
 - Compare the conduction of impulse in the dorsal column & anterolateral system? (2)
- Q2. A). A child was trying to open the 5 cc disposable syringe, suddenly needle was stuck into his skin, he immediately felt sharp pain followed by dull pain sensation. Trace the complete pathway from skin to cerebral cortex, of these two types of pain sensations.
- B). Compare the properties of Meissner's corpuscles with Nociceptors.
- Q3. A) Define analgesia system & mention its components
B) Define Hyperalgesia, give types with examples.
C) What is referred Pain? Give mechanisms of referred pain?
- Q4. A) Give physiological classification of synapse .
B) Enumerate the properties of synaptic transmission.
C) Define Summation, What are its types.
- Q5. A) Enumerate the properties of receptors.
B) Describe mechanism of adaptation & give its importance.
C) What is Labeled Line principle?

AZRA NAHEED MEDICAL COLLEGE

LAHORE

MBBS 2022-23

2nd Year MBBS

(Physiology)

MID MODULAR TEST (CNS 2B)

MULTIPLE CHOICE QUESTIONS (MCQS)

Total Marks: 25

Select Single best answer,

All questions carry equal marks.

Name : _____ Roll No: _____

Dated: 20-07-2023

INSTRUCTIONS:

- 1- All objective questions are to be attempted on the paper and returned to examiner.
2-
3-

Q1. Following accident Aslam went to Neurologist who did the tuning fork test to check the integrity of dorsal column, low frequency vibration below 200 cycles/second will be detected by:

- A. Free nerve ending
- B. Meissners corpuscles
- C. Merckels disk
- D. Hair end organ
- E. Pacinian corpuscle

Q 2. Iggo dome receptors are multiple numbers of merkel's disc connected to a single long myelinated fiber. It carries the following sensation?

- A. Vibration
- B. Pressure
- C. Touch
- D. Pain
- E. Temperature

Q3. Temporal summation occurs when?

- A. A neuron fires repeatedly at very fast rate:
- B. Many neurons fire at the same time
- C. Two neurons share a common neuron
- D. A neuron does not fire, but its excitability is increased for the subsequent stimulus
- E. The branches of the axon terminal of the single neuron diverge on many post synaptic neuron.

Q4. Inhibitory post synaptic potential is produced due to opening up of?

- A. Na⁺ channel
- B. K⁺ channel
- C. Chloride channel
- D. K efflux & chloride influx
- E. Sodium channels

Q5. Which statement is Correct?

- A. Alkalosis decreases the neuronal excitability
- B. Alkalosis increases the neuronal excitability
- C. Acidosis increases the neuronal excitability
- D. Hypoxia increases the neuronal excitability
- E. Caffeine decreases the neuronal excitability

Q6. Which Neurotransmitter has an excitatory effect on some places while has inhibitory effect at parasympathetic nerve ending, such as inhibition of heart by vagus nerve?

- A. Dopamine
- B. Glycine
- C. Acetylcholine
- D. Norepinephrine
- E. Glutamate

Q 7. The receptors which get adapted rapidly are called

- A. Tonic receptors
- B. Cutaneous receptors
- C. Phasic receptors
- D. Visceral receptors
- E. Thermoreceptors

Q 8. If sharp pointed object touches the foot of person, the foot is immediately withdrawn from the object, involuntarily. This action involves the receptor

- A. Free nerve endings(nociceptors)
- B. Hair follicle receptors
- C. Meissners corpuscles
- D. Pacinian corpuscles
- E. Ruffinis end organ

Q 9. All the sensory nerve fibers enter the spinal cord through:

- A. Ventral nerve root
- B. Anterior horn of spinal cord
- C. Dorsal nerve root
- D. Lateral horn
- E. Interneurons

Q10. Which of the following receptors is least adapting receptor?

- A. Pacinian corpuscle
- B. Hair End organ
- C. Merkel's disc
- D. Muscle spindle
- E. Joint capsule receptor

Q11. Which types of sensations are carried by anterolateral system?

- A. Fine Touch.
- B. Two point discrimination.
- C. Crude touch, pain & temperature.
- D. Stereognosis.
- E. Vibration

Q12. A Fifty years old male has difficulty in walking. His gait is unstable, he walks by lifting the feet high. When asked to stand with his feet close together & the eyes closed, he sways & can't maintain the balance & he has lost fine touch, while sensation of pain, warmth & cold are intact. He is diagnosed to have sensory ataxia, which is due to damage of

- A. Sensory nerve root
- B. Cerebellum
- C. Lateral spinothalamic tract
- D. Ventral spinothalamic tract
- E. Dorsal column tract

Q13. The parietal pain is better localized than visceral pain due to?

- A. Ischemia of parietal layers.
- B. Because it becomes a referred pain.
- C. Because brain is conscious of parietal layers.
- D. Direct conduction into local spinal nerves from parietal layers of peritoneum.
- E. Diminished blood flow to parietal layers.

Q14. Patient came in emergency with complaint of loss of pain & temperature sensations, On MRI fluid filled cavities were found in spinal cord, in your opinion what is this disease called:

- A. Tabes Dorsalis
- B. Disc prolapse
- C. Syringomyelia
- D. Poliomyelitis
- E. Amorphosynthesis.

Q15. The Brodmann No. for Somatosensory area 1 in cerebral cortex is?

- A. 3,1,2
- B. 5,7.
- C. 41
- D. 43
- E. 51

Q16. The bilateral excision of somatosensory area I will not significantly impair?

- A. Joint position sense
- B. Touch Localization
- C. Two point discrimination
- D. Sterco gnosis
- E. Pain perception

Q17. Ventrolateral Cordotomy is performed that produces relief of pain in right leg. It is affective because it interrupts the

- A. Left dorsal column
- B. Left ventral spinothalamic tract
- C. Right lateral spinothalamic tract
- D. Left lateral spinothalamic tract
- E. Right Corticospinal tract

Q18. Inverse stretch reflex is an inhibitory reflex which results in relaxation of muscle. The sensory receptor & its innervation is

- A. Muscle spindle & Ia fiber
- B. Muscle spindle & Ib fiber
- C. Golgi tendon organ & Ib fiber
- D. Golgi tendon organ & Ia fiber
- E. Pacinian corpuscle with A α fiber

Q19. A person working in factory, got a cut with knife, which neurotransmitter will be secreted for causing sharp pain?

- A. Glutamate
- B. Substance-P
- C. Dopamine
- D. Serotonin
- E. Acetylcholine

Q20. Fast pain sensations are carried by which type of fiber?

- A. B fibers
- B. A δ fibers
- C. C type fibers
- D. A α fibers
- E. A β fibers

Q21. A 50 years old man reported in emergency with severe pain on maxillary part of right side of face, which is aggravated on taking food, he is suffering from:

- A. Hyperalgesia
- B. Tic Douloureux (Trigeminal Neuralgia)
- C. Brown sequard syndrome
- D. Shingles
- E. Herpes Zoster

Q22. Dynamic stretch response results due to stimulation of which type of sensory nerve fibers of muscle spindle

- A. Type II fibers
- B. Primary nerve endings
- C. Secondary nerve endings
- D. Both primary & secondary ending
- E. Type c fibers

Q23. A 50 years old man reported in emergency with severe pain on maxillary part of right side of face, which is aggravated on taking food, he is suffering from :

- A. Hyperalgesia
- B. Tic Douloureux
- C. Brown sequard syndrome
- D. Shingles
- E. Herpes Zoster

Q24. In Brown-Sequard Syndrome, the sensation that remains intact ipsilaterally below the level of lesion is

- A. Fine touch
- B. Crude Touch
- C. Vibration
- D. Proprioception
- E. Two point tactile discrimination

Q25. Upper motor neuron lesion is associated with feature like

- A. Decreased muscle tone
- B. Individual muscle affected
- C. Muscle atrophic & flaccid
- D. Both superficial & deep reflexes lost
- E. Deep reflexes exaggerated

12. arachnoid granulation for absorption of CSF mainly projects into the
- a) superior sagittal sinus
 - b) inferior sagittal sinus
 - c) cavernous sinus
 - d) transverse sinus
 - e) fourth ventricle

13. the passageway between the third and lateral ventricles of the brain is called the
- a) foramen of magendie
 - b) aqueduct of sylvius
 - c) interventricular foramen(of monro)
 - d) foramen of lushka
 - e) central canal

14. which of the following nuclei belong to the basal ganglia:
- a) lentiform nucleus
 - b) ventral nucleus
 - c) Clark's nucleus
 - d) nucleus dorsalis
 - e) posteromedial nucleus

15. In the basal ganglia, which structures collectively form the neostriatum?
- a) caudate nucleus and subthalamic nucleus
 - b) substantia nigra and subthalamic nucleus
 - c) putamen and globus pallidum
 - d) putamen and caudate nucleus
 - e) subthalamic and putamen

16. filum terminale is extension of:
- a) pia mater
 - b) dura mater
 - c) arachnoid mater
 - d) spinal cord
 - e) anterior longitudinal ligament

17. Which of the following Brodmann's area represent the primary somatosensory cortex?
- a) Area 3,1,2
 - b) Area 44,45
 - c) Area 4
 - d) Area 6
 - e) Area 21,22

18. the commonest cause of the subarachnoid hemorrhage is
- a) vasospasm
 - b) ruptured aneurysm
 - c) brain purpura
 - d) septic embolism
 - e) trauma

19. occlusion of posterior inferior cerebellar artery results in
- a) loss of tactile discrimination
 - b) paralysis of the tongue
 - c) ipsilateral horner syndrome
 - d) contralateral hemiparesis
 - e) loss of pain

20. the opening present in the roof of the 4th ventricle is the
- a) foramen of monro
 - b) foramen of magendie
 - c) foramen of lushka
 - d) aqueduct of sylvius
 - e) central canal

21. the aqueduct of sylvius connects the
- a) fourth ventricle with the ventral canal of the spinal cord
 - b) fourth ventricle with the subarachnoid ventricle
 - c) fourth ventricle with the third ventricle
 - d) third ventricle with the lateral ventricle
 - e) fourth ventricle with the central canal

22. Which structure separates the caudate nucleus from the putamen?
- a) lateral ventricle
 - b) internal capsule
 - c) external capsule
 - d) claustrum
 - e) globus pallidum

23. The anterior commissure connects the following structures
- a) Anterior olfactory nucleus of two sides
 - b) Hippocampi of two sides
 - c) Parietal lobes of two sides
 - d) Olfactory area to hippocampus
 - e) Amygdaloid complex of two sides

24. Climbing fibers represent terminations of axons reaching the cerebellum from:
- a) Superior olivary nucleus
 - b) Inferior olivary nucleus
 - c) Vestibular nucleus
 - d) Superior colliculus
 - e) Red nucleus

25. Medial geniculate body is functionally associated with
- a) Thalamus
 - b) Midbrain
 - c) Limbic system
 - d) 8th cranial nerve
 - e) Basal ganglia

Anatomy Department, ANMC
Mid Module-II Exam of 2nd Year MBBS of 2nd Module

Name:

Time Allowed: 25 Minutes

Roll No.:

MCQ's

- Which of the following statements correctly describes the structure of the cerebellum:**
 - The cerebellum consists of two cerebellar hemispheres joined by a narrow median vermis.
 - The inferior surface of the cerebellum shows a deep groove formed by the superior surface of the vermis.
 - The inferior cerebellar peduncles join the cerebellum to the pons.
 - The gray matter is confined to the cerebellar cortex.
 - The gray matter of folia of the dentate nucleus has a branched appearance on the cut surface, called the arbor vitae.
- A mass in the roof of the posterior horn of the lateral ventricle is likely to compress which structure?**
 - Caudate nucleus
 - Ependyma
 - Fibers of corpus callosum
 - Frontal lobe
 - Thalamus
- Which of the following statements regarding the cerebral cortex is true?**
 - The primary motor cortex lies in the frontal lobe.
 - The primary somatosensory cortex lies in the frontal lobe.
 - The primary auditory cortex lies in the parietal lobe.
 - The primary visual cortex lies in the frontal lobe.
 - Broca's speech area lies in the parietal lobe
- Which statement about the meninges is most accurate?**
 - The dura mater has two distinct layers surrounding the brain and spinal cord.
 - The major venous sinuses lie in the subdural space.
 - Rupture of the middle meningeal artery causes a subarachnoid haemorrhage.
 - Dura mater is thickened either side of the spinal cord to form the denticulate ligaments.
 - The pia mater pierces the distal extreme of the dura as the filum terminale.
- Which of the following hypothalamic nuclei is also known as satiety center?**
 - Ventromedial nuclei
 - Paraventricular nuclei
 - Supraoptic nucleus
 - Anterior nucleus
 - Posterior nucleus
- Which of the following pair provide excitatory input to cerebellum?**
 - Mossy fibers and purkinje fibers
 - granule cell parallel fibers and mossy fibers
 - Climbing fibers and basket cells
 - purkinje cells and golgi cells
 - golgi cells and climbing fibers
- Which portion of the limbic system deals with emotion of fear?**
 - Cingulate gyrus
 - Hippocampus
 - Amygdala
 - Mammillary body
 - Thalamus
- A patient suffers CVA in the area of the left internal capsule affecting motor neurons to the left leg. The patient's leg will exhibit**
 - Spastic paralysis
 - Flaccid paralysis
 - Rigidity
 - Tremors
 - Hyporeflexia
- Which of the following cells contribute to the blood-brain barrier?**
 - Astrocytes
 - Microglia
 - Ependymal cells
 - Fibroblast
 - Oligodendrocytes
- the posterior cerebral artery supplies**
 - broca's area of speech
 - paracentral lobule
 - primary visual area
 - primary motor and sensory area
 - frontal eye field
- parkinson's disease occur due to damage of the**
 - Corticostrate
 - Nigrostrate
 - Pallidostrate
 - Striatonigral
 - Thalamostrate

Anatomy Department, ANMC
Mid Module-II Exam of 2nd Year MBBS of 2nd Module

SEQ

1. (a). Discuss the division of cerebral hemisphere into lobes (3)
(b). Enumerate the functional areas in frontal lobe (2)
2. (a). Enumerate the cerebellar nuclei (1)
(b). Enumerate the signs & symptoms of cerebellar disease (4)
3. Tabulate five groups of thalamic nuclei along with their connections & functions (5)
4. Draw & label the floor of 4th ventricle (5)
5. (a). Enumerate Basal ganglia. Give two diseases caused by their malfunctions (1+1)
(b). Enumerate any six major components of limbic system (3)

CIRCLE ONE BEST ANSWER.

Erasing or overwriting will not be accepted, **NO MARKS** will be awarded even if the answer is correct.

<p>2 The amino acid which undergoes oxidative deamination at the highest rate is</p> <p>(a) Glutamine <input checked="" type="radio"/> (b) Glutamate (c) Aspartate (d) Alanine</p>	<p>2 Which of the following is required for transamination reaction as coenzyme?</p> <p>(a) Coenzyme A (b) Cobalamin (c) Folic acid <input checked="" type="radio"/> (d) Pyridoxal-P</p>
<p>3 Positive nitrogen balance is seen in all of the following except</p> <p>(a) Pregnancy (b) Growth <input checked="" type="radio"/> (c) Fever (d) Convalescence</p>	<p>4 Glycine is required for the synthesis of which of the following compounds?</p> <p><input checked="" type="radio"/> (a) Heme (b) Niacin (c) Thyroxine (d) Serotonin</p>
<p>5 Darkening of urine upon standing is characteristic of which disease?</p> <p>(a) Maple syrup urine disease (b) Phenylketonuria <input checked="" type="radio"/> (c) Alkaptonuria (d) Albinism</p>	<p>6 A child presented with frequency of urine, impaired vision and photophobia. Which of the following defects could be responsible</p> <p>(a) Tyrosinosis (b) Cystinosis (c) Alkaptonuria <input checked="" type="radio"/> (d) Albinism</p>
<p>7 Small amount of urinary oxalates is contributed by the amino acid:</p> <p><input checked="" type="radio"/> (a) Glycine (b) Tyrosine (c) Alanine (d) Serine</p>	<p>8 Which syndrome is associated with Pheochromocytoma?</p> <p>(a) MEN I <input checked="" type="radio"/> (b) MEN II <input checked="" type="radio"/> (c) Von Hippel Lindau syndrome (d) Cushing's syndrome</p>
<p>9 Which of the following amino acid is ketogenic?</p> <p>(a) Glycine (b) Phenylalanine (c) Isoleucine <input checked="" type="radio"/> (d) Leucine</p>	<p>10 Ammonia is formed in the kidney by the action of</p> <p>(a) Arginase (b) Glutamate dehydrogenase (c) Ornithine transcarbamylase <input checked="" type="radio"/> (d) Glutaminase</p>
<p>11 The rate limiting enzyme of urea cycle is:</p> <p><input checked="" type="radio"/> (a) Carbamoyl Phosphate Synthase I (b) Carbamoyl Phosphate synthase II (c) Arginosuccinate lyase (d) Arginosuccinate synthase</p>	<p>12 Tyrosine is required for the synthesis of all except?</p> <p>(a) Thyroxine <input checked="" type="radio"/> (b) Serotonin (c) Epinephrine (d) Melanin</p>
<p>13 Maple syrup urine disease (MSUD) is caused by defect in:</p> <p>(a) Phenylalanine hydroxylase (b) Homogentisate oxidase <input checked="" type="radio"/> (c) Branched chain α-ketoacid dehydrogenase (d) Branched chain aminotransferase</p>	<p>14 The rate limiting step in the biosynthesis of catecholamines is</p> <p>(a) Decarboxylation of dihydroxyphenylalanine (b) Hydroxylation of phenylalanine <input checked="" type="radio"/> (c) Hydroxylation of tyrosine (d) Oxidation of dopamine</p>

15 β -oxidation of fatty acids takes place in

- (a) Erythrocytes
- (b) Endoplasmic reticulum
- (c) Mitochondria
- (d) Cytosol

16 Long chain free fatty acids

- (a) Can freely go inside the mitochondria
- (b) They go inside through Na^+ channels
- (c) Go in through special protein channels
- (d) Go in through the carnitine shuttle

17 The first oxidation step in the β -oxidation of fatty acids requires

- (a) NAD^+ dehydrogenase
- (b) FAD^+ dehydrogenase
- (c) NADPH dehydrogenase
- (d) NADPH reductase

18 In Myopathic CAT/CPT deficiency the muscle biopsy will show

- (a) Raised level of glycogen
- (b) Decreased level of glycogen
- (c) Raised level of TAGs
- (d) Decreased level of TAGs

19 In MCAD deficiency there will

- (a) Accumulation of ketone bodies in the blood
- (b) Accumulation of long chain fatty acids
- (c) Accumulation of medium chain fatty acids
- (d) Accumulation of short chain fatty acids

20 In odd chain fatty acid oxidation methylmalonic acidemia is diagnostic of

- (a) Folate deficiency
- (b) Vitamin B_{12} deficiency
- (c) Carnitine deficiency
- (d) CPT enzyme defect

21 The only regulated enzyme in fatty acid synthesis is

- (a) Acetyl CoA carboxylase
- (b) Acetyl transacylase
- (c) Malonyl transacylase
- (d) Fatty acid synthase

22 In the structure of TAG (Triacylglycerol), which of the fatty acids is always unsaturated?

- (a) The fatty acid on carbon no. 1
- (b) The fatty acid on carbon no. 2
- (c) The fatty acid on carbon no. 3
- (d) All are unsaturated

23 The key regulatory enzyme in the synthesis of cholesterol is

- (a) HMG CoA synthetase
- (b) HMG CoA synthase
- (c) HMG CoA reductase
- (d) DPP isomerase

24 Bile is

- (a) Secretion of liver
- (b) Excretion of liver
- (c) Both secretion and excretion of liver
- (d) Both secretion and excretion in intestines

25 Cholelithiasis is caused by

- (a) Decrease in the secretion of bile acids
- (b) By increase in cholesterol into the bile
- (c) Increase in secretion of bile acids
- (d) Both (a) and (b) are correct

26 Increased ketone bodies formation is seen in

- (a) Prolonged starvation
- (b) Uncontrolled DM Type I
- (c) Keto diet
- (d) All of the above

27 HDL is known as the good cholesterol because

- (a) It transports cholesterol from liver to extrahepatic tissues
- (b) It transports cholesterol from extrahepatic tissues to the liver
- (c) It is synthesized in the body
- (d) It is in the form of cholesterol ester

28 Amphipathic compounds are

- (a) Those which contain both positive and negative ions
- (b) Those who are neutral at a isoelectric pH.
- (c) Those having both hydrophilic & hydrophobic groups
- (d) Those which are mirror images of each other

29 Surfactant in lungs is

- (a) Phosphatidyl ethanolamine
- (b) Phosphatidyl serine
- (c) Dipalmitoyl lecithin
- (d) Phosphatidyl inositol

30 Sphingomyelin is

- (a) Ceramide and phosphocholine
- (b) Ceramide and choline
- (c) A type of cardiolipin
- (d) Phosphatidyl inositol and DAG

AZRA NAHEED MEDICAL COLLEGE LAHORE

2ND End Modular Examination (Reproduction, Sensory & motor)
MBBS Second Year 2022-2023
(Physiology-Subjective)

INSTRUCTIONS
1-All subjective part is to be submitted within 2:10 minutes, no extra time will be given.
2-Neat handwriting, use of margins will increase the outlook /presentation of your paper.

ATTEMPT ALL QUESTIONS; ALL QUESTIONS CARRY EQUAL MARKS
TOTAL MARKS = 45
TIME = 2 Hours & 10 Min
DATED: 04-08-2023

- Q1.A) Enlist the constituents & functions of seminal vesicle secretions (2)
B) Discuss the feedback regulation of hypothalamic-pituitary testicular axis in males (3)
- Q2. A) Explain the process of parturition & hormones involved in this process (2)
B) Discuss the respiratory role of placenta with emphasis on double Bohr effect (3)
- Q3 A) Describe the phases of ovarian cycle in correlation with endometrial cycle with the help of diagram (3)
B) Sketch out the postulated mechanism of ovulation (2)
- Q4. A) Draw corticospinal tract & enlist its functions (3)
B) Discuss the role of brain stem in upright position (2)
- Q5. A) Enlist the signs & symptoms of cerebellar disorders (2.5)
B) Discuss the functions of cerebrotocerebellum (lateral zone) (2.5)
- Q6. Young Fsc student is having problem while writing. His writing became crude, as if he is learning how to write for the first time although he has completed his matriculation with good grades and proper writing. Investigations revealed lesion in his putamen circuit.
A) Draw putamen circuit (2.5)
B) Enlist the disorders of basal ganglia with causes (site of lesion) (2.5)
- Q7. A) Give classification of sensory receptors (2.5)
B) Enlist properties of sensory receptors (2.5)
- Q8. A) Write down the physiological classification & function of nerve fibers (3)
B) Compare chemical & electrical synapse with the help of diagram (2.5)
- Q9. A) Draw dual pain pathway (2)
B) Define referred pain & discuss mechanisms (3)
(2)

Anatomy Department, ANMC (End Module-II)

Time Allowed: 1 Hour 40 Minutes

Total Marks: 50

SEQ

1. Name the paired venous sinuses. Write a note on cavernous sinus (2+3)
2. Give a detailed account of blood supply of spinal cord. Also mention the areas of spinal cord supplied by each vessel (5)
3. Name the different parts of Thalamus. Name the groups of nuclei present in each part. Write a note on the Ventral tier of nucleus (1+1+3)
4. (a). Draw & label a cut section at the level of superior colliculus (2.5)
(b). Give the connections of Dentate nucleus of ~~thalamus~~ cerebellum (2.5)
5. a) Draw and label histological structure of prostate. (2.5)
b) Names its lobes & zones and mention the areas involved in its hypertrophy and carcinoma (1+1+0.5)
6. a) Draw and label ovarian follicle at different stages of ovarian cycle. (3)
b) Enumerate the supports of uterus (2)
7. a young lady was going through a difficult labour. To prevent a tear in the perineum & perineal body.
(a) Write a note on perineal body (2.5)
(b) Enumerate the contents of deep perineal pouch (2.5)
8. write a detailed note on the Testis (5)
9. Write a detailed note on the development of Pituitary gland (5)
10. (a) What is Indifferent gonad. Explain (3)
(b) Give the embryogenesis of uterus (2)

- d) Peripheral nerve
e) Autonomic ganglia
41. The mesonephric ducts open into the
- Cloaca
 - Developing cervical canal
 - Developing urinary bladder
 - Urogenital sinus
 - Urorectal canal
42. Paramesonephric ducts in the male degenerate under the influence of
- Estrogen
 - Follicle stimulating hormone
 - Antimüllerian hormone (AMH)
 - Progesterone
 - Testosterone
43. The fused paramesonephric ducts give rise to the
- Cervical canal
 - Corpus and cervix of the uterus
 - Fallopian tubes
 - Fundus of the uterus
 - Round ligament of uterus
44. the upper portion of vagina is derived from the
- Cloaca
 - Epoophoron
 - Mesonephric duct
 - Urogenital sinus
 - Uterine canal
45. Development of the external genitalia in the male is under the influence of
- Androgens
 - Progesterone
 - Growth hormone
 - Thyroxine
 - Growth stimulating hormone
46. neuroblast in the alar plate of metencephalon give rise to:
- dentate nucleus
 - motor nucleus of facial nerve
 - red nucleus
 - inferior colliculus
 - oculomotor nucleus
47. the correct statement concerning development of nervous system is:
- neuroblasts are present in the marginal layer of neural tube
 - ventricular layer produces glioblasts once it has finished producing neuroblasts
 - there are five primary brain vesicles
 - during the 5th week, each brain vesicle subdivides into 2 parts
 - the 4th ventricle develops in the cavity of mesencephalon
48. The brain flexure which develops between the metencephalon and the myelencephalon is called the:
- pontine
 - hindbrain
 - cervical
 - cephalic
 - midbrain
49. The Pons develops from which one of the following:
- telencephalon
 - diencephalon
 - mesencephalon
 - metencephalon
 - myelencephalon
50. In the development of the nervous system:
- the sulcus limitans is found in the diencephalon
 - the infundibulum is an outgrowth of the telencephalon that develops into the neurohypophysis
 - sensory nuclei in the hindbrain lie ventral to the sulcus limitans
 - the neural tube maintains temporary contact with the amniotic cavity via neuropores
 - Median sulcus marks the boundary between motor and sensory areas

- c) Posterior to calcarine sulcus
- d) Inferior to cingulate gyrus
- e) Posterior to central sulcus

27. The adult spinal cord

- a) Extends to sacrum
- b) Composed entirely of grey matter
- c) terminates inferiorly at L1 in adults
- d) Covered by dura mater only
- e) Cranial dura is adherent to vertebral bodies

28. The substantia nigra of midbrain

- a) Is found only at the level of superior colliculus
- b) Is present between the tegmentum and crus cerebri
- c) Is concerned with autonomic function
- d) Appears red in colour
- e) releases acetylcholine

29. A nucleus in the posterior grey column of spinal cord which is continuous with spinal nucleus of trigeminal nerve is:

- a) Substantia gelatinosa
- b) Nucleus proprius
- c) Nucleus dorsalis
- d) Visceral afferent nucleus
- e) Postero-marginal nucleus

30. The following statements concern the afferent fibers entering cerebellum:

- a) The mossy fibers end by making synaptic contacts with the dendrites of Purkinje cells
- b) The fibers enter the cerebellum mainly through the internal & external arcuate fibers
- c) The climbing & mossy fibers constitute the two main lines of input to cerebellar cortex
- d) The fibers are inhibitory to the cerebellum
- e) The afferent fibers to cerebellum are non-myelinated

31. Which of the following organs is normally characterized by accumulation of corpora amylacea with increasing age

- a) Prostate
- b) Seminal vesicle
- c) Testes
- d) Bulbourethral glands
- e) Vas deferens

32. Within the male reproductive tract, stereocilia are feature of

- a) Rete testis
- b) Seminiferous tubules
- c) Epididymis
- d) Membranous urethra
- e) Penile urethra

33. Which of the following hormone is responsible primarily for ovulation?

- a) FSH
- b) LH
- c) Progesterone
- d) Estrogen
- e) Anti-mullerian hormone

34. Presence of antral cavity is characteristic of

- a) Primary follicle
- b) Primordial follicle
- c) Corpus albicans
- d) Corpus luteum
- e) Secondary follicle

35. Peg cells(non-ciliated cells) are present in epithelium of

- a) Fallopian tube
- b) Uterine cavity in secretory phase
- c) Uterine cavity in luteal phase
- d) Ovary
- e) Primary follicle

36. Molecular layer of cerebellum

- a) Is the innermost layer
- b) Is characterized by presence of purkinje cells
- c) Only receives excitatory input
- d) Consist of basket cells and stellate cells
- e) Is white matter of cerebellum

37. Outer band of Baillarger is present deep to the

- a) Multiform layer
- b) Internal granular layer
- c) Outer granular layer
- d) Internal purkinje layer
- e) Molecular layer

38. Among the neuroglial cells, which of the following cells are associated with immunity?

- a) Astrocytes
- b) Oligodendrocytes
- c) Microglia
- d) Schwaan cells
- e) Ependymal cells

39. Histological features of sensory ganglia include

- a) Presence of multipolar neurons
- b) Ill-defined capsule
- c) Few satellite cells
- d) Presence of pseudounipolar neurons
- e) Enveloped by schwaan cells

40. Betz cells are present in

- a) Cerebrum
- b) Cerebellum
- c) Spinal cord

12. Parkinson's disease occur due to damage of the
- Cortex
 - substantia nigra
 - thalamus
 - claustrum
 - reticular formation
13. One of following fibres pass through the superior cerebellar peduncle:
- Dorsal spinocerebellar
 - Ventral spinocerebellar
 - Pontocerebellar
 - Olivocerebellar
 - Vestibulocerebellar
14. Primary visual cortical center is located in
- The superior parietal lobe
 - The gyrus cingularis
 - In relation to posterior ramus of lateral sulcus
 - In relation to calcarine sulcus
 - In relation to parieto-occipital sulcus
15. Sensation of pain and temperature from right side is carried by
- Left anterior spinothalamic
 - Left lateral spinothalamic
 - Right anterior spinothalamic
 - right lateral spinothalamic
 - medial lemniscus
16. the falx cerebri contains which of the following pair of dural venous sinuses?
- cavernous and transverse
 - superior sagittal and inferior sagittal
 - superior and inferior petrosal
 - superior sagittal and straight sinus
 - cavernous and inferior sagittal sinus
17. Internal arcuate fibres decussate in medulla to form
- Medial lemniscus
 - Lateral fasciculus
 - Trigeminal fasciculus
 - Trapezoid fasciculus
 - Medial longitudinal fasciculus
18. Nuclei found in cerebellum are the
- nucleus putamen
 - nucleus globus pallidus
 - nucleus dentate
 - nucleus lentiform
 - red nucleus
19. Corpus striatum include ;
- Caudate nucleus
 - Substantia Nigra
 - Emboliform nucleus
 - Claustrum
 - Amygdala
20. Regarding internal capsule ;
- Its anterior limb is supplied by branches of middle and anterior cerebral artery
 - Its retro lentiform part is supplied by the branches from anterior cerebral artery
 - Its posterior limb is supplied by posterior cerebral artery
 - Its sublentiform part is supplied by posterior choroidal artery
 - Its genu is supplied direct branches from anterior choroidal artery
21. Projections fibers of cerebral hemispheres are present in ;
- External capsule
 - Medial longitudinal fasciculus
 - Internal capsule
 - Corpus callosum
 - Uncinate fasciculus
22. Regarding lateral ventricle ;
- Has a body that extends from interventricular foramen as far as posterior end of thalamus
 - Has 4 horns
 - Connects to 3rd ventricle by cerebral aqueduct
 - Connects to 4th ventricle by foramen of magendie
 - Is a site of C.S.F absorption
23. Middle cerebral artery supplies ;
- Paracentral lobule
 - Cerebral peduncles
 - Motor area of speech
 - Visual cortical area
 - Cortical area for hearing
24. The floor of 3rd ventricle is formed by part of:
- Hypothalamus
 - Thalamus
 - Caudate nucleus
 - Internal capsule
 - Fornix
25. Which artery pierces the roof of cavernous sinus
- Vertebral artery
 - Labyrinthine artery
 - Internal carotid artery
 - Basilar artery
 - External carotid artery
26. Prefrontal auditory area is situated in ;
- Inferior wall of lateral sulcus
 - Superior to lateral sulcus

Name:

Roll No.:

Time Allowed: 50 Minutes

Total Marks: 50

MCQ's

1. A 55-year-old woman complains of fecal incontinence. The most likely contributing factor to such a problem is atrophy, paralysis, or dysfunction of which of the following structures
 - a) Pubococcygeus muscle
 - b) Iliococcygeus muscle
 - c) Coccygeus muscle
 - d) Pubovesicocervical fascia
 - e) Urogenital diaphragm
2. A carcinoma of the cervix of the uterus is likely to spread via the lymphatics into the
 - a) Popliteal nodes
 - b) Internal iliac nodes.
 - c) Superficial inguinal nodes.
 - d) Celiac nodes
 - e) presacral lymph nodes
3. The superior rectal artery is the continuation of the
 - a) Internal pudendal artery.
 - b) External iliac artery.
 - c) Internal iliac artery.
 - d) Inferior mesenteric artery.
 - e) Abdominal aorta
4. The obturator internus muscle receives its nerve supply from the
 - a) Obturator nerve.
 - b) Pudendal nerve.
 - c) Pudendal nerve and the perineal branch of S4.
 - d) Hypogastric plexus.
 - e) Lumbosacral plexus
5. A patient was examined with a left-sided varicocele; the left testicular vein drains into the
 - a) Left renal vein.
 - b) Left internal iliac vein.
 - c) Left external iliac vein.
 - d) Inferior vena cava.
 - e) Left inferior suprarenal vein.
6. In most women, the anatomic position of the uterus when the bladder is empty is
 - a) retroverted
 - b) anteverted
 - c) anteflexed
 - d) anteverted and anteflexed
 - e) Retroflexed
7. The pelvic diaphragm is formed by which of the following muscles and their covering fasciae.
 - a) piriformis
 - b) levator ani
 - c) deep transverse perineal muscles
 - d) perineal membrane
 - e) sphincter urethrae
8. A 60 year old male is diagnosed with CA prostate, his oncologist is concerned regarding spread of carcinoma to skull. This spread of Cancer to the skull is via the:
 - a) pampiniform plexus
 - b) external iliac veins
 - c) vertebral venous plexus
 - d) portal vein
 - e) inferior vena cava.
9. The ejaculatory ducts open into which one of the following structures ?
 - a) External urethral orifice
 - b) Ureter
 - c) Urinary bladder
 - d) Urethral crest
 - e) Prostatic urethra
10. In males, traumatic injury to the perineum may rupture the bulb of the penis or the penile urethra. Which of the following areas will be safe from this extravasation of
 - a) The anterior abdominal wall
 - b) The ischiorectal fossa
 - c) The scrotum
 - d) The penis
 - e) The superficial perineal pouch
11. Regarding the transverse section of the midbrain, at level of the inferior colliculus which cranial nerve nucleus is present?
 - a) Facial
 - b) Oculomotor
 - c) Trigeminal
 - d) Trochlear
 - e) Optic

AZRA NAHEED MEDICAL COLLEGE
LAHORE
MBBS 2022-23
2nd Year MBBS
(Physiology)
Mid Module Exam

MULTIPLE CHOICE QUESTIONS (MCQS)

Total Marks: 20

Select Single best answer,

All questions carry equal marks.

Name : _____ Roll No: _____

Dated: 7-9-2023

INSTRUCTIONS:

1- All objective questions are to be attempted on the paper and returned t

- The type of cortex that receives input primarily from several regions of the cerebral cortex & does not fit into the conventional definition of motor or sensory cortex is known as:
 - Secondary auditory cortex
 - Secondary somatosensory cortex
 - Association cortex
 - Supplementary motor cortex
 - Secondary visual cortex
- Prosopagnosia is a condition in which patient is unable to remember faces. Damage to which of the following will result in this condition?
 - Prefrontal area
 - Junction of parietal & temporal lobes on non-dominant hemispheres
 - Frontal eye fields
 - Under surface of medial occipital & temporal lobes
 - Limbic association area of frontal % anterior temporal lobes
- The area of confluence, analysis of different sensory information & interpretative area associated with intelligence is:
 - Primary sensory area
 - Secondary sensory area
 - Sensory association area
 - Wernick's area
 - Angular gyrus area
- In the past, prefrontal lobotomy was used as treatment for depression patients. After this, the patients exhibit: loss of ability to solve complex problems, unable to do several parallel tasks at the same time, inappropriate social responses & rapid mood changes. Which of the following area would be damaged in this case?
 - Premotor cortex
 - Parieto-occipito-temporal cortex in non-dominant hemisphere
 - Broca's area
 - Limbic association area
 - Prefrontal association area
- A 25-years-old boy had road traffic accident & traumatic brain injury. On examination, he seems to be able to understand the written & spoken words but cannot create correct sound to be able to speak recognizable words. Which of the following area would be damaged in this scenario?
 - Prefrontal area
 - Wernicke's area
 - Broca's area
 - Angular gyrus area
 - Limbic area
- For establishment of long term memory which of the following is required:
 - Decrease in number of transmitter vesicles
 - Decrease in number of presynaptic terminals
 - Change in structure of dendritic spines
 - Prolonged activation of calcium channels
 - Release of serotonin on sensory terminals
- After bilateral damage to hippocampi the patient will be characterized by:
 - Anterograde amnesia
 - Retrograde amnesia
 - Verbal and symbolic type of memories can be made
 - Memories stored before the damage are lost
 - Reward and punishment centers are intact
- After ablation of posterior orbital frontal cortex following set of clinical features will be developed:
 - Anterograde amnesia
 - Retrograde amnesia
 - Loss of fear, excessive sexual activity and tameness
 - Insomnia and motor restlessness
 - Excessive rage
- The major reward center is located in which part of hypothalamus:
 - Lateral and ventromedial nuclei
 - Periventricular area
 - Paraventricular nuclei
 - Perifornical nuclei
 - Arcuate nuclei

10. The Klüver-Bucy syndrome is characterized by decreased emotional expression, loss of fear, excessive oral behavior and increased sexual activity. These symptoms are produced by bilateral lesion of the:
- Hippocampus
 - Amygdala
 - Ventral hypothalamus
 - Corpus callosum
 - Cingulate gyrus
11. The neurotransmitter which plays an important role in REM sleep is:
- Acetylcholine
 - Dopamine
 - Epinephrine
 - Nor epinephrine
 - Serotonin
12. Stimulation for natural sleep most importantly comes from:
- Raphe nucleus in pons and medulla
 - Thalamus
 - Hypothalamus
 - Inferior Olivary Nucleus
 - Solitary Nucleus
13. A fit characterized by a progressive march of muscle contractions throughout the opposite side of body from mouth to legs is:
- Alzheimer's disease
 - Grand mal epilepsy
 - Jacksonian epilepsy
 - Psychomotor seizures
 - Petit mal epilepsy
14. A neurodegenerative disease with memory impairment, deterioration of language and visuospatial deficit (not oriented with respect to time & place with the help of vision) is known as:
- Parkinson's disease
 - Schizophrenia
 - Depression
 - Epilepsy
 - Alzheimer's disease
15. A patient presents to CMA Hospital in Ophthalmology outdoor. He is diagnosed with hypermetropia. Which statement describes his condition best:
- There is blurred vision to far objects
 - The near vision is better
 - The person is unable to focus on any object
 - Near vision is poor
 - Accommodation is lost
16. A 75-years-old male, presented to eye with complaints of loss of accommodation. On examination his power of accommodation found to be decreased to 0 diopters. What would be the most probable diagnosis?
- Myopia
 - Cataract
 - Astigmatism
 - Hyperopia
 - Presbyopia
17. Both rods & cones release which of the following neurotransmitter at their synapses with bipolar cells:
- GABA
 - Glutamate
 - Glycine
 - Dopamine
 - Acetylcholine
18. How much rise in intraocular pressure for long term duration can cause glaucoma:
- 5 to 10 mm Hg
 - 10 to 15 mm Hg
 - 15 to 20 mm Hg
 - 20 to 25 mm Hg
 - 25 to 30 mm Hg
19. A lesion in the left optic tract would cause:
- Blindness of right eye
 - Bitemporal hemianopsia
 - Binasal hemianopsia
 - Left homonymous hemianopsia
 - Right homonymous hemianopsia
20. The electrical changes in the rod for transmission of visual image are excited by which of the following :
- Metarhodopsin I
 - Metarhodopsin II
 - Bathorhodopsin
 - All-trans retinal
 - Lumirhodopsin

AZRA NAHEED MEDICAL COLLEGE LAHORE

Mid-Modular Examination (Higher Brain Functions & Eye)
MBBS Second Year 2022-2023
(Physiology-Subjective)

INSTRUCTIONS

- 1-All subjective part is to be submitted within 60 minutes, no extra time will be given.
- 2-Neat handwriting, use of margins will increase the outlook /presentation of your paper.

ATTEMPT ALL QUESTIONS; ALL QUESTIONS CARRY EQUAL MARKS

TOTAL MARKS = 30

DATED: 07-09-2023

TIME = 60 Minutes

Q1. A) A middle aged man suddenly woke up when he fell from bed in his dream. He was able to remember other details of the dream as well.

- A. What type of sleep was he going through just before walking up?
- B. Tabulate five differences between Non-REM sleep and REM sleep with special emphasis on EEG waves

(1+4)

Q2. A) A 35-years-old male brought to emergency department in very confused and lethargic condition. According to his attendant, he lost consciousness, fell down on ground with a seizure & jerky movements of the body. The whole episode lasted for 3 minutes. On asking patient he told that he just felt uneasiness after hearing sudden news of his father's death and didn't remember what happened to him after that. He had previous history of such attacks for many years with gradual increase in intensity. On his examination, doctor observed tongue bite & urination.

- 1) What would be the most probable diagnosis of this condition?
- 2) Discuss patho-physiology of this condition

B) Write down the site & indications of lumbar puncture

(1+3+1)

Q3 A) What is limbic system? Draw the components of limbic system with key position of hypothalamus

B) Write down the name & functions of any four hypothalamic nuclei

(3+2)

Q4. A) Discuss the molecular mechanism of intermediate memory in detail along with diagram

B) Enumerate all association area with detailed note on pre-frontal cortex.

(2.5+2.5)

Q5. A) Discuss the mechanism of accommodation in detail.

B) Write short notes on light & dark adaptation

(3+2)

Q6. A) Draw & Label the visual Pathway & indicate the effects of lesion in right optic nerve, optic chiasma, optic tract & optic radiation

B) Illustrate the mechanism of phototransduction

(4+1)

Name:

MID MODULE 3A (Head & Neck) exam 11.9.23

Roll No.:

Time Allowed: 25

Total Marks: 25

1. Which of the following bones contribute to the floor of orbit?
 - a) frontal
 - b) sphenoid
 - c) temporal
 - d) maxilla
 - e) ethmoid
2. What is the innervation of extraocular muscle which chiefly acts to adduct the eyeball?
 - a) optic nerve
 - b) oculomotor nerve
 - c) abducent nerve
 - d) ophthalmic nerve
 - e) trochlear nerve
3. With regards to the lacrimal gland, which of the following statements is TRUE?
 - a) Sympathetic fibres to the lacrimal gland travel with the maxillary nerve
 - b) Arterial supply to the lacrimal gland is via branches of the external carotid artery
 - c) The lacrimal lake is located in the lateral canthus of the eye
 - d) The orbital septum is located posteriorly to the lacrimal gland
 - e) Parasympathetic fibres to lacrimal gland travel along lingual nerve
4. The lateral boundary of the infratemporal fossa is formed by which of the following?
 - a) Carotid sheath
 - b) Ramus of the mandible
 - c) Medial pterygoid
 - d) Greater wing of sphenoid
 - e) Maxilla
5. Which vessel arises from the maxillary artery in the infratemporal fossa between the two roots of auriculotemporal nerve is?
 - a) Infraorbital
 - b) Mandibular
 - c) Pterygoid
 - d) Middle meningeal
 - e) Lingual
6. Which of the following muscles is used for opening the mouth?
 - a) Lateral pterygoid
 - b) Medial pterygoid
 - c) Temporalis
 - d) Masseter
 - e) Buccinator
7. Maxillary artery supplies the nasal cavity through:
 - a) Infraorbital artery
 - b) Middle meningeal artery
 - c) Accessory meningeal artery
 - d) Sphenopalatine artery
 - e) Alveolar artery
8. Inability to move the mandible to the left would indicate Paralysis of the:
 - a) Right lateral Pterygoid muscle
 - b) Left medial Pterygoid muscle
 - c) Left lateral Pterygoid muscle
 - d) Right masseter muscle
 - e) Right temporalis muscle
9. Which of the following statements is true regarding mouth?
 - a) Hard palate is formed by sphenoid and ethmoid bone
 - b) Elevation of soft palate is by a muscle innervated by glossopharyngeal nerve
 - c) Pharyngeal tonsils are present on anterior 2/3rd of tongue
 - d) Parotid duct opens in vestibule of the mouth
 - e) Facial nerve supplies the ventral surface of tongue
10. The lingual nerve supplies which of the following?
 - a) motor innervation to mylohyoid muscle
 - b) Taste fibers to posterior third of tongue
 - c) Motor innervation to genioglossus muscle
 - d) General sensation to the posterior third of the tongue
 - e) General sensation to the anterior two-thirds of the tongue
11. A 21-year-old man was brought to the emergency department because of severe epistaxis (nosebleed) from the nasal septum. This area, known as Kiesselbach's (Little's) area, involves mostly anastomoses between which of the following arteries?
 - a) Ascending palatine and ascending pharyngeal
 - b) Posterior superior alveolar and accessory meningeal
 - c) Anterior ethmoidal and sphenopalatine
 - d) Septal branches of the sphenopalatine and internal carotid artery
 - e) Descending palatine and tonsillar branches of the pharyngeal
12. A 1-year-old infant is admitted to the hospital with fever. Radiographic examination reveals a sinus infection. Which of the following paranasal sinuses is present at this age?
 - a) Frontal sinus
 - b) Maxillary sinus
 - c) Sphenoid sinus

- d) Middle ethmoidal air cells
e) Posterior ethmoidal air cells
13. Which nerve might be damaged by a fracture involving the cavernous sinus?
- a) Olfactory tract
b) Optic nerve
c) Abducens nerve
d) Facial nerve
e) Vestibulocochlear nerve
14. Which of the following is a separate bone?
- a) Superior nasal concha
b) Crista galli
c) Labella
d) Middle nasal concha
e) Inferior nasal concha
15. The parotid duct:
- a) Pierces the masseter & opens opposite upper 2nd molar tooth
b) Pierces masseter & opens opposite lower 2nd molar tooth
c) Pierces buccinators opens opposite upper 2nd molar tooth
d) Pierces buccinators & opens opposite 3rd molar tooth
e) Runs on the surface of masseter & pierces buccinators at posterior border of masseter
16. One of the following is true about the boundaries of infra-temporal fossa
- a) Medial boundary is the lateral surface of medial pterygoid muscle
b) Roof is formed by infratemporal surface of lesser wing of sphenoid
c) Anterior wall is formed by anterior surface of maxilla
d) Communicates with pterygopalatine fossa through petrotympanic fissure
e) The posterior boundary is the upper part of carotid sheath
17. Nasal septum is formed by one of the following bones:
- a) Perpendicular plate of ethmoid
b) Nasal bone
c) Palatine process of maxilla
d) Frontal process of maxilla
e) Cribriform plate of ethmoid
18. In an attempt to protrude the tongue, it deviates to the right side. This indicates a lesion of which of the following nerves:
- a) Right glossopharyngeal
b) Left accessory
c) Right hypoglossal
d) Left hypoglossal
e) Right lingual
19. One of the following structures is involved in the nerve supply of the lacrimal gland
- a) Inferior salivary nucleus
b) Otic ganglion
c) Pterygopalatine ganglion
d) Zygomaticofacial nerve
e) Inferior orbital nerve
20. Pterion is a point on skull where following bones meet:
- a) Frontal, parietal, occipital, zygomatic
b) Frontal, parietal, temporal, sphenoid
c) Frontal, parietal, temporal, zygomatic
d) Frontal, parietal, occipital, temporal
e) Frontal, temporal, sphenoid, zygomatic
21. Infection of the nasal cavities may spread to one of the following areas:
- a) Anterior cranial fossa through cribriform plate
b) Internal ear through pharyngotympanic tube
c) Sphenoid air sinus through Bulla ethmoidalis
d) Frontal air sinus through sphenoidal recess
e) Anterior ethmoidal air sinus through superior meatus
22. The true statement regarding the temporomandibular joint is:
- a) Is a ball & socket joint
b) Has the chorda tympani nerve as its posterior relation
c) Has the tendon of the lateral pterygoid muscle attached to the joint capsule and the head of the mandible
d) Is supplied by the temporal nerve
e) Is most unstable with the teeth occluded
23. Immediately after exiting the skull through stylomastoid foramen facial nerve is seen supplying the following muscles
- a) Temporalis
b) Sternocleidomastoid
c) Posterior belly of digastric
d) Superior belly of omohyoid
e) Frontalis
24. The second cranial nerve arising from the optic chiasma & entering the orbits through optic canal is accompanied by:
- a) Trochlear nerve
b) Abducent nerve
c) Oculomotor nerve
d) Middle meningeal artery
e) Ophthalmic artery
25. The communication between the cranial cavity and the orbit responsible for passage of trochlear and abducent nerve is known as:
- a) Lamina papyracea
b) Inferior orbital fissure
c) Superior orbital fissure
d) Pterygomaxillary fissure
e) Optic canal



SECOND YEAR MBBS
MID MODULE EXAM
MODULE 3-2023 (SEQs)

Total marks: 20 marks
Time Allowed: 1 hour

04/09/2023

Q No. 1

A 45-year-old male patient presented with pain, redness and swelling of his right big toe in the ER. The patient reported that he had two similar previous episodes with the same symptoms lasting four to five days and was treated by emergency physicians. On examination, he had mild fever. The toe was red, swollen, warm and tender. His serum uric acid level was 10.8 mg/dL.

- a. What is your most likely diagnosis? Which enzyme defect is present in this condition? 1
- b. Write down the steps of purine degradation pathway. 4

Q No. 2

- a. Draw a structure of pyrimidine ring to show its sources of carbon and nitrogen 1.5
- b. How is de novo purine synthesis different from pyrimidine synthesis? 1.5
- c. Write down the differences between CPS I and CPS II. 2

Q No. 3

- a. What is transcription? Compare transcription with replication. 3
- b. Write a note on post transcriptional modifications. 2

Q no 4

- a. What is recombinant DNA technology? What are its applications? 3
- b. Write a note on post-translational modifications? 2

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Anatomy Department, ANMC (2nd Year MBBS)
MID MODULE 3A (Head & Neck) exam 11.9.23 (SEQ's)

Total Marks: 25

Time Allowed: 50

- 1) (a) Enumerate the structures that make up the refractive media of eye. (2)
(b) Tabulate nerve supply and actions of extraocular muscle. (3)
- 2) (a) Give an account on drainage of aqueous humour. (2)
(b) Give boundaries and contents of infratemporal fossa. (3)
- 3) (a) Tabulate type, variety, articular surfaces, ligaments and movements of temporomandibular joint. (4)
(b) What is lock jaw. (1)
- 4) Give a detailed account on venous drainage of the face? (5)
- 5) A man, 30 years of age comes to OPD with following complaints:
 - i. Inability to close his left eye, (3)
 - ii. Tears overflowing on the left cheek
 - iii. Saliva dribbling from his left angle of the mouth.
 - a) What are the anatomical justifications of the conditions i, ii, iii? (3)
 - b) Give the extracranial course of the structure responsible for the above mentioned conditions (2)

Chief Editor

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MBBS, MS, PhD, FIMSA, FIAMS, FAMS, FASI is ex-Professor and Head, Department of Anatomy, Lady Hardinge Medical College (LHMC), New Delhi. She joined LHMC in 1964 where she completed her MS and PhD, and taught anatomy till 1996. She has received fellowships of the Indian Medical Association, Academy of Medical Specialists, and the International Medical Science Academy. She has received fellowships of the Academy of Medical Sciences (FAMS) in 2005. She was honoured with Excellence Award in Anatomy in 2004 by Delhi Medical Association. She has received Life Time Achievement Award, Fellowship of Anatomical Society of India, and DMA Distinguished Services Award, in 2015. She is visiting faculty of DNB, MDS and a PhD examiner.

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Set 15

15

Name:

Roll No.:

Total Marks: 15

Time Allowed: 15 Minutes

1. Center of optic stalk contains a portion of the hyaloid artery, later called the:
 - a) Central artery of the retina
 - b) Central vein of the retina
 - c) Ophthalmic artery
 - d) Optic nerve artery
 - e) Vein of optic nerve
2. Meckel's cartilage disappears except for two small portions at its dorsal end that persist and form the:
 - a) Incus and malleus
 - b) Incus and stapes
 - c) Incus and styloid process
 - d) Stapes and malleus
 - e) Styloid process and stapes
3. One of the following is a median cartilage of the developing chondrocranium:
 - a) Nasal capsule
 - b) Ala orbitalis
 - c) Parachordal cartilages
 - d) Ala temporalis
 - e) Periotic capsul
4. The structures derived from pharyngeal pouches are:
 - a) Tympanic cavity from 2nd pouch
 - b) Tonsillar sinus from 2nd pouch
 - c) Superior parathyroid from 3rd pouch
 - d) Thymus from 4th pouch
 - e) Thyroid from 1st pouch
5. The merged medial nasal prominences give rise to:
 - a) Philtrum of upper lip
 - b) Primary palate with upper five incisor teeth
 - c) Nasolacrimal duct
 - d) Part of secondary palate
 - e) Cheeks
6. Specialized post ganglionic neurons are present in which part of adrenal gland:
 - a) Zona glomerulosa
 - b) Zona fasciculate
 - c) Zona reticularis
 - d) Medulla
 - e) Sub capsular region
7. Thyrotropin (TSH) is synthesized and secreted by which cells?
 - a) Neurosecretory neuron of neurohypophysis
 - b) Acidophil of adenohypophysis
 - c) Basophil of adenohypophysis
 - d) Thyroid follicular cells
 - e) Thyroid C cells
8. Which cells of islets of Langerhans produce insulin?
 - a) Alpha cells
 - b) Beta cells
 - c) Delta cells
 - d) PP cells
 - e) Gastrin cells
9. The Parafoallicular cells of the Thyroid gland are located at one of the following site:
 - a) In the lumen of thyroid follicles
 - b) In between lining epithelium of thyroid follicles
 - c) With in the connective tissue septa
 - d) In the capsule of thyroid gland
 - e) As cell clusters in between thyroid follicles
10. Submandibular gland has predominantly which type of acini?
 - a) Exclusively serous acini
 - b) Primarily serous acini present with mixed tubuloacinar secretory units
 - c) Exclusively mucous acini
 - d) Primarily mucous acini present with mixed tubuloacinar secretory units
 - e) Mixed tubuloacinar units
11. The intercalated ducts of pancreatic acini have which type of epithelium?
 - a) Low cuboidal epithelium
 - b) Low columnar epithelium
 - c) Transitional epithelium
 - d) Keratinized epithelium
 - e) Pseudo stratified columnar epithelium
12. The vermilion zone of lip is covered by?
 - a) Simple cuboidal epithelium
 - b) Thin stratified squamous keratinized epithelium
 - c) Thin stratified squamous non keratinized epithelium
 - d) Simple columnar epithelium
 - e) Thick non keratinized epithelium
13. The posterior limiting membrane of cornea is called?
 - a) Descemet's membrane
 - b) Bruch's membrane
 - c) Bowman membrane
 - d) Substantia propria
 - e) Retinal pigment epithelium
14. Photoreceptor cells of retina are?
 - a) Ganglion cells
 - b) Amacrine cells
 - c) Muller's cells
 - d) Horizontal cells
 - e) Rods and cones
15. Von ebner's glands are present in:
 - a) Crests of the circumvallate papillae.
 - b) Apex of Filiform papillae
 - c) Trenches of circumvallate papilla
 - d) Bases of Fungiform papillae
 - e) Foliate papillae



MID MODULE
ENDOCRINOLOGY - 2023
SECOND YEAR MBBS – MCQs

Name: _____
Roll No: _____
Marks obtained: _____
Marks: 20, Time: 20 min.
Dated: 02/10/2023

ENCIRCLE ONE BEST ANSWER.

Any cutting or overwriting will not be accepted, **NO MARKS** will be awarded even if the answer is correct.

- | | |
|--|---|
| <p>1 The hormones that bind to the plasma membrane receptors or cell surface receptors and facilitate the release of the second messenger falls in</p> <p>(a) Group I Hormones
<input checked="" type="radio"/> (b) Group II Hormones
(c) Group III Hormones
(d) Group I and II Hormones</p> | <p>2 A 59-years-old chronic smoker is recently found to have a large mass in his lungs, likely a tumor. His lab investigations shows reduced serum sodium levels and reduced urine osmolality. He likely has which of the following endocrine abnormalities?</p> <p>(a) Acromegaly
<input checked="" type="radio"/> (b) Syndrome of Inappropriate secretion of ADH (SIADH)
(c) Cushing Syndrome
(d) Diabetics Insipidus</p> |
| <p>3 Which of the following hormone can cause hyperglycemia without known effects on glycogen?</p> <p>(a) Prolactin
<input checked="" type="radio"/> (b) Growth Hormone
(c) Oxytocin
(d) Anti Diuretic Hormone</p> | <p>4 The condition associated with the onset of hypersecretion of growth hormone in adults is known as:</p> <p><input checked="" type="radio"/> (a) Acromegaly
(b) Gigantism
(c) Dwarfism
(d) Cushing Syndrome</p> |
| <p>5 The growth hormone binds to its cell surface receptor and activates the</p> <p>(a) cGMP production
(b) cAMP production
(c) Tyrosine kinase activity
<input checked="" type="radio"/> (d) JACK- STAT pathway</p> | <p>6 Which of the following hormone is associated with diuresis?</p> <p>(a) Estrogen
(b) Oxytocin
(c) Growth Hormone
<input checked="" type="radio"/> (d) Vasopressin</p> |
| <p>7 Which of the following hormones is synthesized by the posterior pituitary gland</p> <p><input checked="" type="radio"/> (a) Oxytocin and ADH
(b) FSH and LH
(c) Growth hormone and ADH
(d) Prolactin and Oxytocin</p> | <p>8 This hormone is not secreted by Hypothalamus</p> <p>(a) GHRH (Growth Hormone Releasing Hormone)
<input checked="" type="radio"/> (b) FSH (Follicular Stimulating Hormone)
(c) TRH (Thyroid Releasing Hormone)
(d) CRF (Corticotrophin Releasing Factor)</p> |
| <p>9 Peptide hormones include all except:</p> <p>(a) Glucagon
(b) Insulin
<input checked="" type="radio"/> (c) Sex Hormones
(d) Oxytocin</p> | <p>10 The group I hormones are mostly:</p> <p>(a) Cholesterol in nature
(b) Cholesterol and Hydrophobic in nature
(c) Lipophilic in nature
<input checked="" type="radio"/> (d) Cholesterol and Lipophilic in nature</p> |

11 The chemical messenger that perform various body functions are termed as

- (a) Signals
- (b) Vitamins
- (c) Hormones
- (d) Nerves

12 Besides cAMP, which one of the following molecule act as a "second messenger"?

- (a) Calcium
- (b) ATP
- (c) cDNA
- (d) ADP

13 Growth hormone is secreted by which gland?

- (a) Hypothalamus
- (b) Thyroid Gland
- (c) Pituitary Gland
- (d) Adrenal Gland

14 Which one of the following cells secrete androgens hormones?

- (a) Cells of Leydig
- (b) Mucus Cells
- (c) Sertoli cells
- (d) Germ Cells

15 What is the precursor of steroid hormone?

- (a) Carbohydrates
- (b) Proteins
- (c) Vitamins
- (d) Cholesterol

16 Which of the following is not inhibited by the effect of somatostatin?

- (a) Growth Hormone
- (b) Thyroid Stimulating Hormone
- (c) Dopamine
- (d) Glucagon

17 All of the following are hormones of the anterior pituitary except:

- (a) Human growth hormone (GH)
- (b) Follicle-stimulating hormone (FSH)
- (c) Parathyroid hormone (PTH)
- (d) Thyroid-stimulating hormone (TSH)

18 The primary target of the releasing and inhibiting hormones of the hypothalamus is the:

- (a) Bone marrow
- (b) Anterior pituitary
- (c) Gonads
- (d) Liver and adipose tissue

19 Which of the following is Growth hormone inhibiting hormone?

- (a) Somatostatin
- (b) GHRH
- (c) TRH
- (d) FSH

20 Which gland regulate the effects of hormones during puberty?

- (a) Adrenal Gland
- (b) Hypothalamus
- (c) Thyroid Gland
- (d) Pituitary Gland

Total marks: 20
Time Allowed: 40 Minutes

Q No. 1.

- a. Classify hormones according to their mechanism of action with example. 03
- b. Name the hormones that are secreted from posterior pituitary gland. Mention the function of each hormone. 02

Q No. 2.

A 14-years-old boy came to pediatrics OPD, as his mother was worried for his height. On examination, his height was 4.9", weight was 50kg, flat nasal bridge, short limbs, wide hands and bowed legs. He was diagnosed as a case of dwarfism.

- a. Name the deficient hormone. 01
- b. Write down the regulation of this hormone. 02
- c. What happens if there is hypersecretion of this endocrine mediator? 02

Q No. 3.

A 45-years-old obese male presented in ER with complains of severe headache. On examination, the patient had a moon face appearance and buffalo hump. His blood pressure was 170/110 mmHg (normal - 120/80 mmHg). The doctor noticed prominent wasting of the muscles in the extremities.

- a. Name the clinical condition. 01
- b. What are the possible causes of this condition? 02
- c. Name the test that is used in the diagnosis of this condition. 02

Q no 4.

- a. Write down the major releasing factors of the hypothalamus. 02
- b. What are the biochemical functions of gonadotropins? 03

AZRA NAHEED MEDICAL COLLEGE LAHORE

MID MODULAR TEST (3B) MBBS Second Year 2022-23 (Physiology-Subjective)

INSTRUCTIONS

- 1-All subjective part is to be submitted within 1 Hour 10min, no extra time will be given.
- 2-Neat handwriting, use of margins will increase the outlook /presentation of your paper.

ATTEMPT ALL QUESTIONS; ALL QUESTIONS CARRY EQUAL MARKS.

DATED: 3-10-23

TOTAL MARKS = 30

TIME = 1 hour 10min

- Q1.A) Write down the Chemical Classification of hormones with examples. (3)
B) Draw a diagram to show the mechanism of action of steroid hormones. (2)
- Q2. Munir was worried about the extraordinary height of his younger son. At the age of 12 years he was having large size hands & feet than the normal. Laboratory investigations revealed more than normal concentration of Growth hormone. (1)
i. What is most probable diagnosis? (4)
ii. Compare & contrast the pituitary dwarfism to Cretinism.
- Q3.A) When TSH act on thyroid follicle, what series of reaction occur for the synthesis of Thyroid hormone. (2)
B) A 50-year-old lady came to doctor & complained about husky voice, weight gain & easy fatigability. She also told that she prefer to live in warm room. On Examination, her pulse was 55/min. Non pitting type of edema of legs & features of peripheral vascular disease due to atherosclerosis. (0.5)
i) What is most probable diagnosis? (1)
ii) Cause of edema & atherosclerosis in this patient. (1)
iii) What is the effect of this Hormone on heart & CNS. (1)
iv) Name the test which will help out in diagnosis. (0.5)
- Q4. A 50- year- old person having destruction of adrenal cortex due to tuberculosis is referred to medical specialist .On examination he was having Hypotension, extreme muscle weakness & melanin pigmentation which was prominent on lips & nipples. Lab investigations showed hyponatremia, hyperkalemia & mild acidosis. (1)
i. What is most likely diagnosis? (1)
ii. Give precisely the cause of each clinical feature & lab investigations mentioned in this scenario. (4)
- Q5. A 78-year-old man noticed that he needed to increase the volume on his television in order to listen to the news. Also, he frequently noticed that when he would answer the phone, the person on the other end seemed to be mumbling. **presbycusis** (1)
i) What is the diagnosis? (1)
ii) Explain the attenuation reflex? (4)
- Q6. A. Trace the olfactory pathway (03)
Write a short note on: Hypogeusia, Ageusia, Dysgeusia & taste blindness (02)

AZRA NAHEED MEDICAL COLLEGE LAHORE

PHYSIOLOGY DEPARTMENT
2ND YEAR MBBS 2022-2023
MID MODULE TEST (3B)

MULTIPLE CHOICE QUESTIONS (MCQ5)

Total Marks 20, Time =20mins

Select Single best answer, all questions carry equal marks.

NAME: _____ ROLL NO. _____

DATE: 3-10-23

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. According to place principle, high frequency sounds activate:
 - A. Basilar membrane near the apex of cochlea
 - B. Basilar membrane near the base of cochlea
 - C. At intermediate distance between the two extremes
 - D. Reissner's membrane
 - E. Tectorial membrane
2. Transmission of sound waves in the cochlea occur when:
 - A. The foot of the stapes moves inward against the oval window
 - B. The foot of the stapes moves inward against the round window
 - C. The head of the malleus moves inward against the oval window
 - D. The incus moves inward against the oval window
 - E. The incus moves inward against the round window
3. A 20-year-old young man, went to his clinician to report that he recently began to experience pain in ear and difficulty hearing during normal conversations. He was suffering from tonsillitis two weeks back. A Weber test indicated that sound from a vibrating tuning fork was lateralized to the right ear. Rinne's test showed that bone conduction was better than air conduction in the right ear. Most probable diagnosis is:
 - A. Sensorineural deafness in both ears
 - B. Conductive deafness in the right ear
 - C. Sensorineural deafness in the right ear
 - D. Conductive deafness in the left ear
 - E. Sensorineural deafness in the left ear
4. Hypothalamus produces both releasing & inhibiting hormone for:
 - A. Thyroid Hormone
 - B. Aldosterone
 - C. Cortisol
 - D. Growth Hormone
 - E. Androgens
5. The hormone that uses the phospholipase-C as second messenger is:
 - A. Oxytocin
 - B. Calcitonin
 - C. FSH
 - D. ACTH
 - E. PTH
6. Hypersecreting tumor of Zona reticularis of adrenal cortex is most likely to produce:
 - A. Addison's disease
 - B. Conn's syndrome
 - C. Cushing's syndrome
 - D. Cushing disease
 - E. Adrenogenital syndrome
7. Exophthalmos is seen in a patient diagnosed with:
 - A. Autoimmune thyroiditis
 - B. Congenital hypothyroidism
 - C. Simple goiter
 - D. Toxic nodular goiter
 - E. Grave's disease
8. Most peculiar feature of Cretinism is
 - A. Abnormal growth
 - B. Thin & Lean body
 - C. Low IQ
 - D. Increase Thyroid hormone
 - E. Enlarged thyroid gland
9. A 45-years-old male is presented to doctor with complaints of fatigue, muscle weakness, loss of appetite and weight loss. On examination his blood pressure was low and pigmented blotches were seen on lips and different areas of body. On investigations which of the following would be the most likely finding?
 - A. Alkalosis
 - B. Hyperglycemia
 - C. Eosinophilia
 - D. Hyponatremia
 - E. Hypokalemia

10. A 35-year-old patient of rheumatoid arthritis was on corticosteroids for last two years. She developed truncal obesity, moon like face, abdominal stria, bone weakness. Her B.P is 160/100 mmHg. Most likely diagnosis is:

- A. Addison's disease
- B. Cushing syndrome
- C. Pheochromocytoma
- D. Hyperthyroidism
- E. Conns syndrome

11. The down regulation of hormone receptors can occur as a result of

- A. Activation of intracellular protein signaling molecules
- B. Increased production of receptors
- C. Increased availability of receptors to act with hormone
- D. Inactivation of some of receptor molecule
- E. Decreased hormone concentration

12. A middle aged man is presented to hospital with high blood pressure, head ache & muscle cramps. On lab investigation he was found to have hypokalemia & hypernatremia, most probable diagnosis

- A. Addison's disease
- B. Grave's disease
- C. Conns syndrome
- D. Hyperthyroidism
- E. Hypothyroidism

13. Anti-inflammatory effects of cortisol is due to:

- A. Release of chemical substances from damaged tissues
- B. Increased blood flow in damaged area
- C. Leakage of large quantities of plasma out of capillaries
- D. Decreased movement of leucocytes to inflamed area
- E. Ingrowth of fibrous tissue after some days

14. Blood levels of following hormones act by an Inositol 1,4,5- triphosphate (IP3)-Ca⁺⁺ Mechanism of action

- A. 1,25 -Dihydroxycholecalciferol
- B. Progesterone
- C. Insulin
- D. Parathyroid hormone (PTH)
- E. Gonadotropin releasing hormone (GnRH)

15. Following hormone acts on intracellular cytoplasmic receptors:

- A. Cortisol
- B. Insulin
- C. Glucagon
- D. Thyroid stimulating hormone
- E. Aldosterone

16. A group of medical students volunteers for a study in which they are administered injections of TSH over a period of several weeks. They develop weight loss and nervousness. Which of the following would be least affected?

- A. Thyroidal uptake of iodine
- B. Synthesis of thyroglobulin
- C. Cyclic adenosine monophosphate (cAMP) in thyroid cells
- D. Cyclic guanosine monophosphate (cGMP) in thyroid cells
- E. Size of the thyroid

17. A mother brings her 7-year-old son to the pediatrician for an evaluation of his short stature. Blood tests reveal that his average plasma concentration of growth hormone is within the normal range for his age or even slightly elevated, but levels of IGF-1 are markedly reduced. The growth failure in this child is most likely due to a defect in

- A. GHRH release from the hypothalamus.
- B. GHRH receptors.
- C. GHIH
- D. GHIH receptor
- E. Growth hormone receptors.

18. Growth Hormone has got ketogenic effect as it

- A. Mobilizes the proteins converts into Aceto acetic acid.
- B. Mobilizes the fatty acids converts into Glycogen.
- C. Mobilizes the Glycogen converts into Aceto acetic acid.
- D. Mobilizes the fatty acids converts into Glycogen.
- E. Mobilizes the fatty acids converts into Aceto acetic acid.

19. Li near movement of the head & its position relative to gravity is detected by

- A. Otolith Organ
- B. Anterior semicircular canal
- C. Posterior semicircular canal
- D. Cochlea
- E. Organ of corti

20. When you ride in an elevator or you jump up & down, the vertical acceleration or deceleration is detected by

- A. Utricle
- B. Saccule
- C. Horizontal semicircular canal
- D. Anterior semicircular canal
- E. Posterior semicircular canal

Anatomy Department, ANMC
MID MODULE 3B (Head & Neck) SEQ's

Total Marks: 25

Time Allowed: 50 Minutes

1. A 12 year old boy complained of sore throat and ear ache. He had high grade fever, and difficulty in swallowing, he was also a mouth breather.
 - a) What is Waldeyer's ring? (2)
 - b) Give anatomical justification for boy's earache. (1)
 - c) Which structures form bed of tonsil? (1)
2. A 40 year old woman underwent thyroidectomy. She complained of hoarseness of voice after surgery.
 - a) Why does she complain of hoarseness after surgery? (2)
 - b) Which other glands are at risk of removal and why? (1)
 - c) Give blood supply of thyroid gland? (2)
3. A patient came to OPD with a complaint of pain in ear. He was diagnosed as infection in his middle ear.
 - a) What is the name of this condition? **otitis media** (1)
 - b) Give a detailed account on boundaries and contents of middle ear. (4)
4. a) Enlist layers of deep cervical fascia. Write down the modifications of investing layer of deep cervical fascia. (4)
b) Name the most important joint of neck, give anatomical reasoning for your choice. (3)
5. a) Give boundaries and contents of carotid triangle. (2.5)
b) Write a short note on Ansa cervicalis. (2.5)

4b) atlantoaxial joint

Anatomy Department, ANMC
SEQ's of MODULE 3 (Head & Neck) EXAM

Time Allowed: 1 Hour 40 Minutes

Total Marks: 50

- 1) Write a detailed note on Palatogenesis (5)
- 2) Give the embryogenesis of Tongue (5)
- 3) Draw & label the histological structure of Adrenal gland (5)
- 4) Describe the histological structure of Thyroid gland (5)
- 5) A surgeon operated upon a lady for a benign parotid tumour & removed the tumor. Following surgery, the lady complained that the food remained in the oral vestibule while chewing & had to be removed with a finger. Her mouth remained relatively dry most of the time. The doctor concluded there was damage to a few structures.
 - (a). Name the structures that are likely to be damaged during surgery. (2)
 - (b). Why did her mouth remain relatively dry? Give an anatomical reason for this complaint. (0.5+1.5)
 - (c). Why did the food remain in the oral vestibule? Explain. (1)
- 6). (a). Write a detailed account on boundaries of pterygopalatine fossa? Also name its contents (2.5)
(b). write a note on the Maxillary division of CN V. (2.5)
- 7). Write a note on the boundaries of Middle ear cavity (5)
- 8). (a). Trace the pathway of tear (3)
(b). What do you understand by the Pharyngeal lymphatic ring. (2)
- 9). Name the parts of the Pharynx in a correct order. Write a detailed note on the Palatine tonsil (1.5+3.5)
- 10). A child picks on his nose while playing and it starts bleeding .
 - a) what is the source of bleeding? (1)
 - b) Give blood supply of septum of nose. (3)
 - c) What is Sphenoethmoidal recess (1)

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END MODULAR TEST
MBBS Second Year 2022-23
(Physiology-Subjective)

INSTRUCTIONS

- 1-All subjective part is to be submitted within 2:10 minutes, no extra time will be given.
- 2-Neat handwriting, use of margins will increase the outlook /presentation of your paper.

ATTEMPT ALL QUESTIONS; ALL QUESTIONS CARRY EQUAL MARKS.

TOTAL MARKS = 45
TIME = 2 hours

DATED: 25-10-2023

- Q1. A) Enlist the different layers of cerebral cortex & give their functions. (2)
B) What are features of Dominant hemisphere? (1)
C) Discuss Association areas of brain & outline their functions. (2)
- Q2. An adult young person was brought to Hospital. His relatives told that he became unconscious with tonic contraction of body, his breathing was difficult. He also bit his tongue. EEG showed dome pattern of High Voltage, High frequency discharge. (2.5)
i) What is most probable diagnosis? (2.5)
ii) What are other types of this disorder. (2)
- Q3. A) Describe all types of error of refraction along with correction of each. (2)
B) Define Accommodation. Discuss neural pathway of "Accommodation reflex". (3)
- Q4. A) Draw & Label the visual Pathway. (2.5)
B) Discuss the effects of Lesion in right optic Nerve, optic Chiasma, optic tract. (2.5)
- Q5. A) Describe the mechanism of production of receptor potential in stereocilia of hair cells of cochlea. (2.5)
B) Bomb blast occurred in the vicinity of house, woman present in home started feeling that her hearing is slightly affected, but complete examination revealed no auditory damage, what is the mechanism which protect the ear from damage to loud sound? (2.5)
- Q6. A) Write down the steps for the synthesis of Thyroid hormone. (2)
B) A patient came to doctor & told that from few days he is feeling nervousness & his sleep is reduced. He has palpitation, and intolerance to heat, has sweating on hands. & in spite of fact that his appetite is increased, his body weight is reducing. On examination there was protrusion of eyeball, Heart rate was increased & B; P was Raised (Hypertension). In your opinion
i) What is most probable diagnosis of this condition? (1)
ii) Discuss the physiological effects of hormone involved? (2)
- Q7. A) Enumerate the hormones involved in blood sugar level regulation. (2)
B) Discuss the role of insulin in carbohydrates and protein & fat metabolisms. (3)
- Q8. A) Enlist the hormones required for the ECF calcium homeostasis. (1.5)
B) A young man came to OPD with complaint of frequent bone fracture. On X-ray examination he was found to be having cystic punched out areas in the bones. On investigations alkaline phosphates level was increased.
i) What is the most probable diagnosis? (1.5)
ii) What is metastatic calcification? (2)
- Q9. A) Compare the dwarfism due to hypopituitarism and cretinism (2)
B) Differentiate between Cushing disease & Cushing syndrome & give its feature. (2.5)
(2.5)



SECOND YEAR MBBS
END MODULE EXAM – 2023 (SEQs)

Total marks: 30
Time Allowed: 2 hours

27/10/2023

Q No. 1.

- a. Write down the mechanism of action of JAK-STAT pathway. 2
- b. A 54-years-old female visited her physician for recurring headaches accompanied by palpitations and excessive sweating for last 4 months. On examination her pulse rate was 90 bpm and blood pressure was 170/110 mmHg. The physician suspected pheochromocytoma. 1
- i – What is pheochromocytoma? 1
 - ii- Production of which hormone is altered in this disease? 1
 - iii- What laboratory investigations will help to confirm the diagnosis? 1

Q No. 2.

- a. Mention the functions of insulin 1
- b. A 25-years-old female complains of acne, hirsutism, weight gain and secondary amenorrhea. On examination, she has abdominal obesity and high blood pressure. Lab investigations revealed elevated levels of cortisol and aldosterone in blood. CT scan of abdomen showed adrenal gland tumor. 2
- i- Enumerate the hormones that are secreted from adrenal gland. 2
 - ii- Elaborate the steps of synthesis of Androgens. 2

Q No. 3.

- A 6-years-old male child apparently normal at birth came to OPD who now shows unusual habit of biting lips, spastic movement of limbs and mental retardation. His biochemical laboratory investigations show elevated uric acid levels. He is diagnosed as a patient of Lesch-Nyhan syndrome. 1
- i- Which metabolic pathway is affected? 2
 - ii- Name the deficient enzyme in this syndrome. 2
 - iii- Write down the reaction catalyzed by this enzyme. 2

Q no 4.

- A 50-years-old obese man came to OPD with complains of aching joints since 3 days. His physical examination revealed swelling, tenderness, and asymmetric tophus on his big toe of left foot. Biochemical investigations showed striking elevated levels of uric acid. 1
- i- What is the diagnosis of this patient? 2
 - ii- Write down the complete reaction which shows the synthesis of uric acid from its immediate precursor. 2
 - iii- Mention the treatment for this disease. 1

Q no. 5.

- Compare post-transcriptional modification in Prokaryotes and Eukaryotes 2

Q no. 6

- i. What is PCR? What are the clinical applications of PCR. 5
- ii. What is recombinant DNA? Write its clinical applications? 2