3rd YEAR MBBS

PARASITOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE

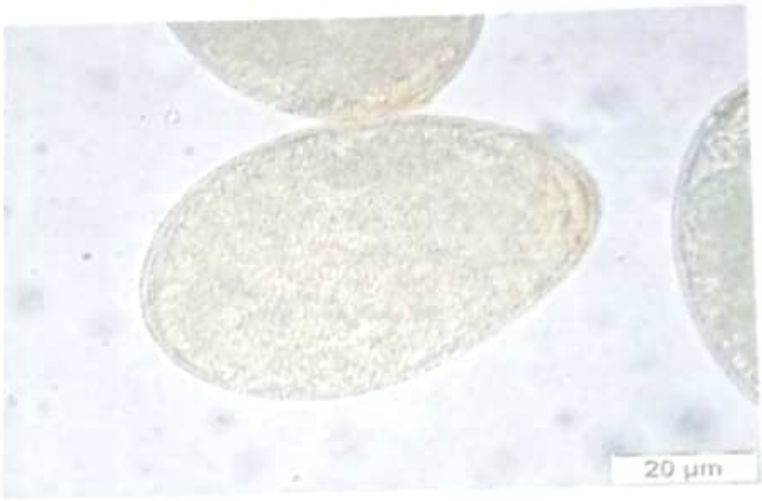
UNOBSERVERED STATION

For Candidate:

Time Allo

Marks 04

For Candidate:



Tasks:

1. Which parasite has this operculated ovum?
2. Which anemia is caused by this organism ?

Key:

1. Diphylobothrium latum(Fish tape worm)
2. Megaloblastic anemia

3rd YEAR MBBS
PARASITOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

min

Time Allowed: 04

A twelve years old patient presented in emergency with high grade fever and chills. He had history of alternate day fever and generalized weakness. Laboratory diagnosis revealed slight anemia, thrombocytopenia and disturbed liver function tests. A thin smear stained by Giemsa stain showed Signet rings and banana shaped bodies inside RBCs.

Tasks:

Carefully examine the given slide / photograph and answer the following questions:

1. What is your diagnosis? 02

2. What are the complications caused by this specie? 02

Key:

1. Plasmodium falciparum malaria. (1) 0.5

2. Cerebral malaria and black water fever. (2) 1.5

3rd YEAR MBBS

Parasitology

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 min

For Candidate

Tasks:

1. Name the parasite having this ovum?
2. What are the complications caused by its infection?

Key:

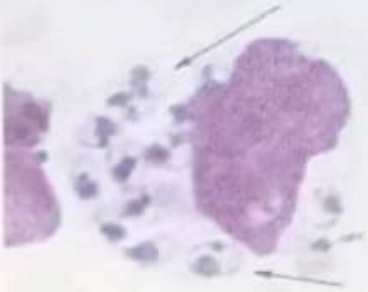
1. Trichurus trichura
2. Acute appendicitis,Diarrhoea, Rectal prolapsed,Abdominal pain.

MBBS 2ND PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)

Marks: 04

Time Allowed: 04 Minutes

For Candidate:



This lesion appear on face and extremities weeks to months after bite of the sandfly shown above in the resident of a tropical country resident adult male. The blood picture shows ingested bodies (marked with arrow heads) in the leucocytes.

Tasks:

1. What is the name of this parasite? 1

2. Which for of this parasite is present in the leukocyte? 1

3. LD bodies is the abbreviation of .....?

KEY

1. Leishmania

2. Amastigote Form

3. Leishman-Donovan (LD) Bodies

YEAR MBBS

Parasitology

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 min

For Candidate:

Tasks:

The patient shown in the picture has giant swelling on leg. This condition is most probably because of a parasite shown above.

1. What is the name of this parasite? 1
2. What is this condition shown in picture called? 1
3. What is the vector and intermediate host of this parasite? 2

Key:

1. *Wuchereria bancrofti*
2. Elephantiasis
3. Mosquito (Culex & Anopheles)

MBBS 2ND PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively structured Performance Evaluation (OSPE)

Unobserved Station

Marks: 04 Time Allowed: 04 Minutes

For Candidate:

A 43-year-old homeless, HIV-positive male, was brought to an emergency department after he was discovered appearing confused in a park. He had a temperature of 101°F, with and nuchal rigidity. CSF culture of the specimen was done. Following preparation was positive.

Tasks:

1. Name the organism. 2
2. Which stain is used in this diagram ? 2
3. **Key:**
4. Cryptococcus neoformans.
5. India ink staining of CSF.

1st YEAR MBBS

GENERAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EXAMINATION (OSPE)

UNOBSERVED STATION

Marks: 01 Time allowed: 06 minutes

for Candidate.

A young female had past history of typhoid fever. Presently having no clinical signs and symptoms of typhoid. but was a source of infection for others.

1. What are these sort of cases called as?
2. What is the difference between colonization and commensals?
3. Name two important flora of skin.

3rd YEAR MBBS

GENERAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 min

For Candidate:

The patient is presented in outdoor with symptoms of urinary tract infection. His culture and sensitivity is negative for bacterial infection. He has only the history of developing skin itching after taking bath in a pond of his village. In urine examination, eggs were found that had characteristic spine shown in the fig A.

Tasks:

1. What is the causative agent of this infection? 1
2. What is this itch called that develops after taking bath in some pond or pool? 2
3. Name the tumour caused by this parasite. 1
4. **Key:**
5. 1. *Schistosoma hematobium*
6. 2. Swimmers itch
7. 3. Bladder carcinoma

3rd YEAR MBBS

GENERAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 m

For Candidate:

A child 3 years old is presented in general physician clinic with nocturnal anal pruritis and sleeplessness in night. The physician advised stool examination and perianal cellophane tape preparation. When the microbiologist called the patient for peri anal scotch tape preparation, h found organism as shown in the diagram..

1. What is the name of this organism? 2

2. What is the route of transmission of this organism? 2

Key:

1. Enterobius vermicularis

2. Feco- oral route

3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION

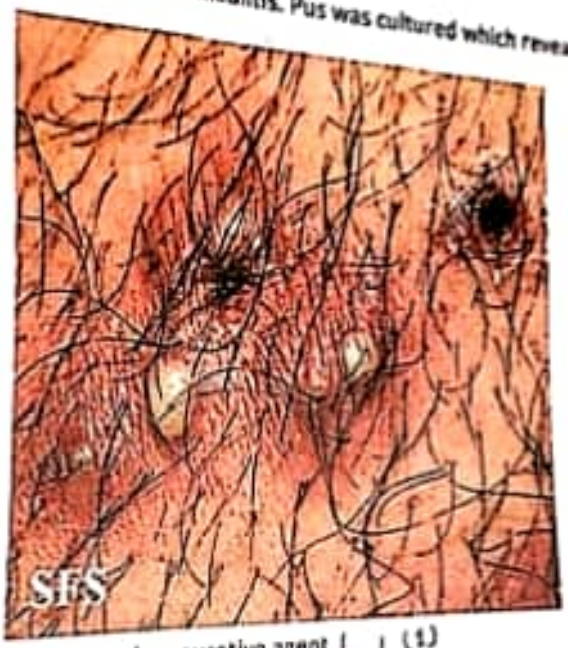
OBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

For Candidate

A patient developed folliculitis. Pus was cultured which revealed Gram positive cocci in clu



1. Name the causative agent. ( ) (1)
2. Name the two sites where this organism is present as flora. (1)
3. Name the three toxins produced by this organism. (1)
4. Name one important drug used for treatment of MRSA. ( ) (1)

① Staphylococcus aureus.

② Nose, skin, vagina in 5% of women.

③ Enterotoxin, Toxic shock syndrome Toxin, Exfoliatin Toxin

④ Vancomycin, Gentamicin sometimes added.

3rd YEAR MBBS

SPECIAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Time allowed: 04 minutes

Marks: 04

For Candidate:

A young boy developed severe form of meningococcemia, having high grade fever, shock, widespread purpura, disseminated intravascular coagulation, thrombocytopenia, adrenal insufficiency. Gram negative diplococci were obtained on Gram staining.

1. Name the causative agent and the disease. 2
2. Name the enriched media used for its culturing. 1
3. Name one biochemical test used for its identification in laboratory and its principle. 1

(1) Neisseria Meningitidis causing waterhouse-Fridrichsen syndrome.

(2) chocolate agar.

(3) Maltose Fermentation.

3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04 Time Allowed: 04 min

For candidate:

Carefully examine the photograph and answer the following questions :

TASK: 1.Name the media shown in the above picture.

2. What are the parts of the medium in dark pink and yellow color in 2nd tube from left?

3. What is the interpretation of the reaction shown in the 2nd tube from left?

---

① Triple Sugar iron medium (TSI)

② A slanted well oxygenated area on the Top called Slant. (Pi
A Solid Poorly oxygenated area in the bottom called Butt. (ye

③ Slant = alkalin (red) → show no fermentation.
Butt = acidic (yellow) → show glucose fermentation.
Gas = -ve
H_2S = -ve

Example
Shigella, Serratia

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively structured Performance Evaluation (OSPE)
Unobserved Station

Time Allowed: 04 Minutes

Marks: 04

For Candidate:

You are shown a culture medium plate.

Tasks:

Carefully examine the medium and answer the following questions:

1. Name the culture medium — 01
2. Name the phenomena observed on the plate — 02
3. Name the organism causing it. — 01

---

(1) Blood agar plate.
(2) Swarming phenomena.
(3) proteus species.

① Asymptomatic infection (carriers state)

② **Colonization**

The presence of a new organism that is neither a member of the normal flora nor the cause of symptoms.

Commensalism

An association between two organisms in which one benefits and the other derives neither benefit nor harm.

③ Staphylococcus Epidermidis.
Candida albicans.
Staphylococcus aureus.

3rd YEAR MBBS

SPECIAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks 04 **Time allowed 04 minutes**

For Candidate.

A 19-year-old male presents to an STD clinic with a hard, painless chancre on his penis. The physician collects material from the chancre for analysis by direct immunofluorescence staining, as shown

1. What is the most likely etiology and infection? 2
2. What is the cell morphology of the bacterium shown? 1
3. What technique is used for its diagnosis? 1

(1) Syphilis caused by Treponema pallidum.

(2) Spirochetes are shown.

(3) Dark field Microscopy.

SPECIAL BACTERIOLOGY

3rd YEAR MBBS

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

A patient is suffering from pulmonary tuberculosis. A pathognomic histological lesion is produced in his lungs.

a) Which type of hypersensitivity reaction is responsible for produc lesion. 2

b) Describe the mechanism of formation of this lesion. 2

(Already Done)

a) Be

b)

c) (

9)

b) E

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KEY

1. Neisseria gonorrhea
2. Thayer martin medium
3. Streptococcus pneumoniae

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively structured Performance Evaluation (OSPE)
Unobserved Station

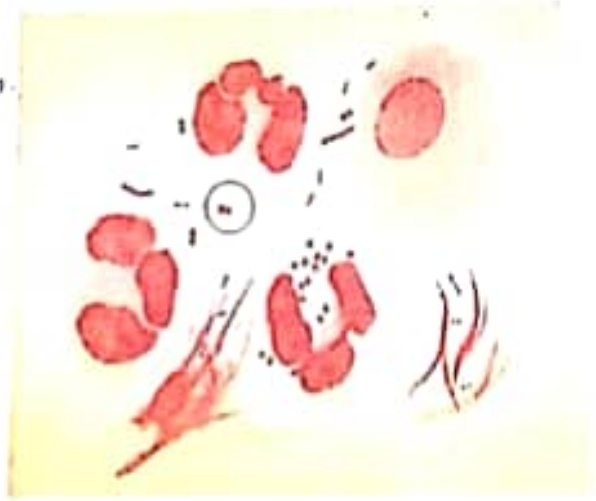
Marks: 04 **Time Allowed: 04 Minutes**

For candidate:

A young woman presented with history of muco-purulent discharge, & intermenstrual bleeding. Gram stain of her discharge revealed the following organism. The organism showed Oxidase positivity.

① N. Gonorrhea.
② Thayer Martin medium.
③ Streptococcus Pneumoniae.

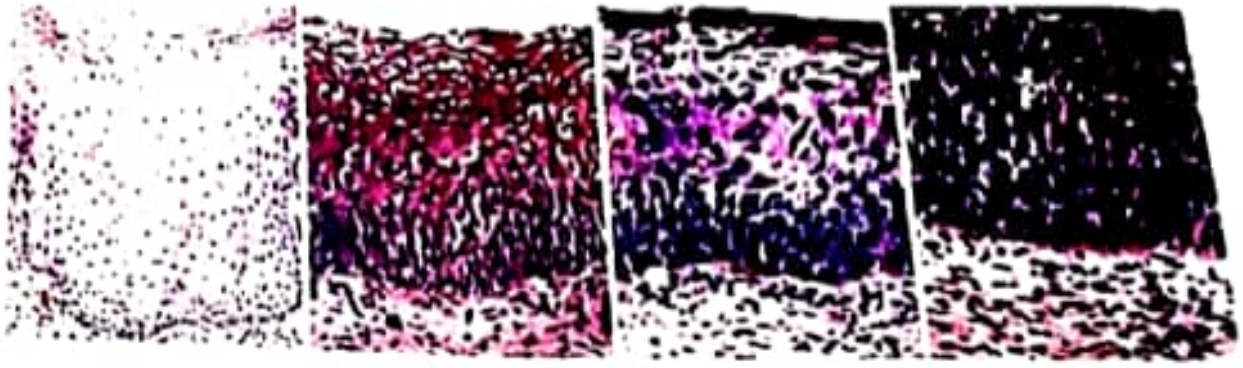
→ N. meningitidis



Carefully examine the photograph and answer the following questions:

TASK:

1. Name the causative agent.
2. Name the selective media used for its culturing
3. Name another diplococci.



1- What is the most likely diagnosis. 2
2- Which tumour can develop in this case 1
3- What is pleomorphism 1

① Carcinoma in situ / atypical dysplastic cells.

② Invasive / Malignant Tumor (e.g squamous cell carcinoma)

③ The variation in size and shape of cancer cells. cells range from small cells with undifferentiated appearan to Tumor Gaint cells which are many Times larger than their Neighbors.

Unobserved Station

Marks: 04

For Examiner:

Time Allowed: 04 Minutes

1. Blood agar plate
2. Swarming phenomena
3. *Proteus spp.*

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively structured Performance Evaluation (OSPE)

Unobserved Station

Marks: 04

For Candidate:

You are shown a culture medium plate.

Tasks:

Carefully examine the medium and answer the following questions:

1. Name the culture medium 01
2. Name the phenomena observed on the plate 02
3. Name the organism causing it. 01

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(a) Names

Trichuris Trichura

a.

Ascaris lumbricoids

b.

Carefully examine the given ova and answer the following questions

a. Name the worms with these forms of eggs. (1)
b. Name two other nematodes. (1)

c write the procedure of preparion of stool slide for microscopy write names of two stains used for it. (2)

(b). Enterobius vermicularis, ancylostoma dudenale, Necator, Strongyloids, Trichinella.

(c) Saline and iodine preparation to detect parasites.

(i) Place a drop of saline on one end + a drop of iodine on the other end of the slide.

(ii) Using a wire loop, mix a small amount of stool specimen in each drop.

(iii) Place a cover slip on drop and observe in microscope under 10x and then 40x to view detail of structures.

(v) Light must be dimmed and condenser brought downwards for viewing.

marks 04 Time allowed 04 minutes

For Candidate:

A post operative patient admitted in ICU developed septic shock. His labs showed that he is infected with a gram negative rod

1. Which component of gram negative bacteria causes septic shock/septicemia in patient
2. What is the difference between toxic shock and septic shock? (1)
3. Name one cytokine which causes fever in patients with septic shock. (1)
4. Name two virulence factors(enzymes) responsible for the invasiveness of bacteria? (1)

① Lipid-A Portion of Lipopolysaccharide (endotoxin) causes septic shock.

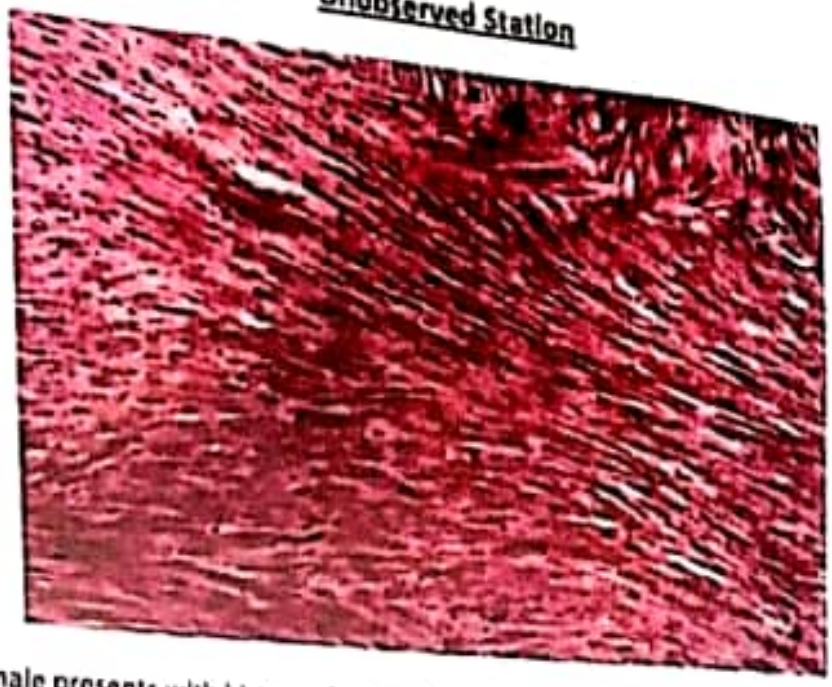
② Difference B/w

septic shock	Toxic shock
① The Bacteria are present in the Bloodstream.	① The Toxin is circulating in the Blood.
② Blood cultures are usually +ve.	② Blood cultures are -ve.

③ IL-1, IL-6, TNF (Fever)

④ IgA protease
Coagulase
Hyaluronidase
Collagenase

Unobserved Station



A 35yr old female presents with history of menorrhagia & lower abdominal pain. On USG uterus is enlarged. Multiple masses of different sizes are observed in the uterus. The specimen /photograph is provided to you.

TASK:

1. Give your diagnosis. 1
2. Write two points of identification. 1,1
3. Is the lesion benign & malignant. 1

---

① Leiomyoma

② well differentiated myofibrils, Less mitotic figure. No hyperchromasia

③ Benign.

(5)

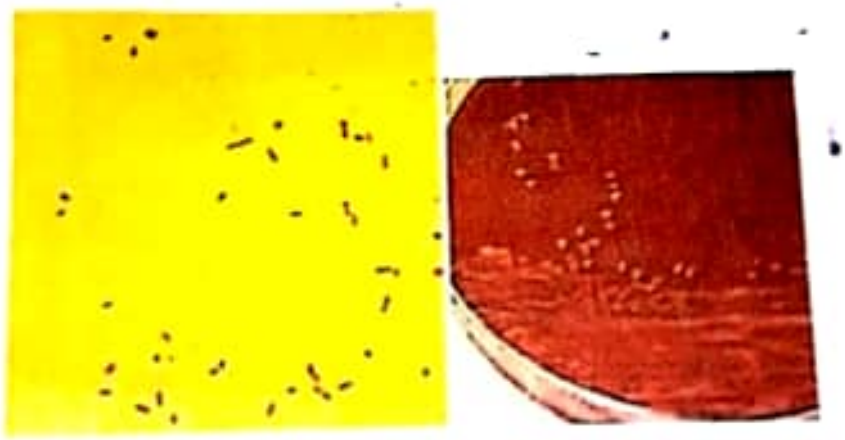
3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04 **Time allowed: 04 minutes**

For Candidate:

A 3-year-old child was brought to the emergency department with fever, vomiting, light sensitivity, and neck stiffness. The CSF specimen was positive for Gram-negative rods, similar to that shown and was positive for growth on chocolate agar.

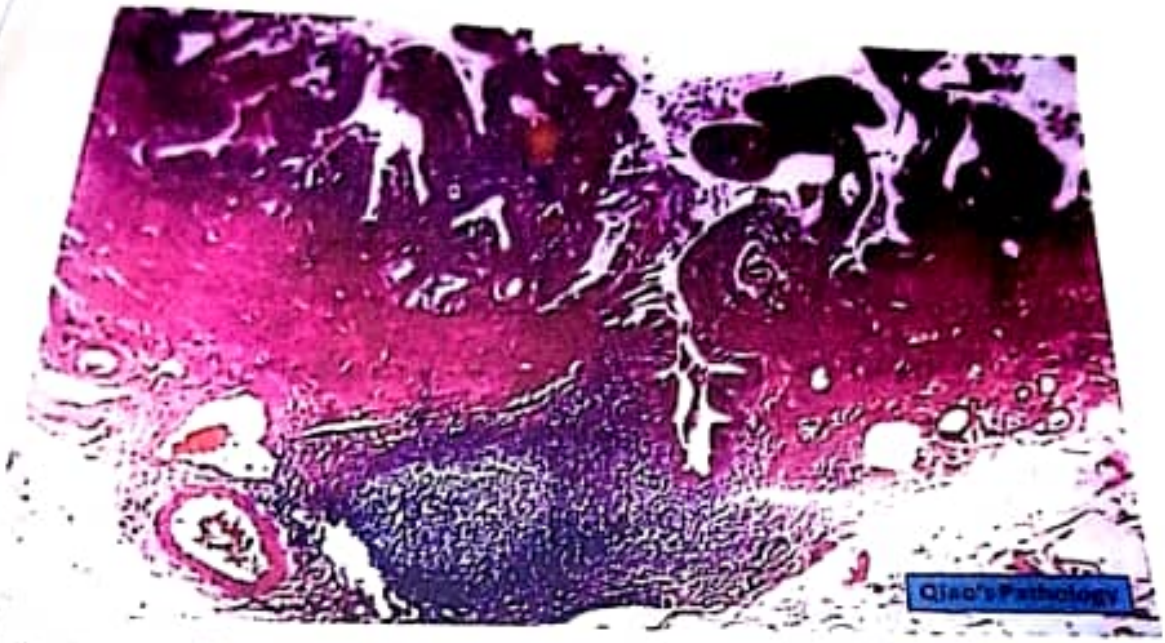


1. What is the most likely etiology and infection? 2
2. What is the cell and colony morphology of the bacterium shown? 1
3. What two organic compounds must be provided to this obligate human pathogen to survive during in vitro growth? 1

(1) Meningitis caused by H. influenza.

(2) Gram -ve Cocco-Bacillus.
Large, round, smooth, convex, colorless-to-grey opaque colonies on chocolate agar.

(3) Heme (Factor X)
NAD (Factor V)



Sur the images which is a gall bladder and mention the type of lesion (2)

B) Write down at least two points of identification. (2)

① chronic inflammation with Granuloma.

② ⊛ RoKitansKy-Aschoff Sinuses, granulomas, smooth muscles hypertrophy.
→ Neuromatous hyperplasia, Hyalinized collagen, dystrophic calcification, lymphoid aggregates.
→ Variable mucosal changes (Normal, atrophic, ulcerated).
→ variable metaplastic change.

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KEY

1. E coli
2. Indole, MR and motility test positive.
3. EHEC
   ETEC
   EPEC
   EIEC
   EAEC

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)
Unobserved Station

Marks: 04 **Time Allowed: 04 Minutes**

For candidate:

A 20 year young female complained sudden pain in the lower abdomen, burning micturation, urgency and frequency. Routine urine examination, showed numerous pus cells. Gram staining revealed Gram negative rods. Culture revealed lactose fermenting Gram negative rods on macconkey agar.

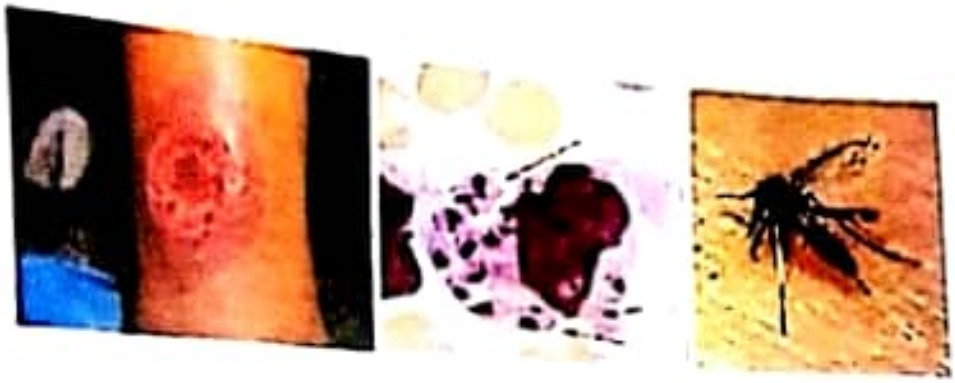
1. Name the causative agent.
2. Name the biochemical test used to differentiate it from other lactose fermenters.
3. Name the different strains of this bacterium.

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)

Marks: 04

Time Allowed: 01 Minutes

For Candidate:



This lesion appear on face and extremities weeks to months after bite of the sandfly shown above in the resident of a tropical country resident adult male. The blood picture shows ingested bodies (marked with arrow heads) in the leucocytes.

Tasks:

1. What is the name of this parasite? 1
2. Which for of this parasite is present in the leukocyte? 1
3. LD bodies is the abbreviation of _____? 1

---

1 Leishmania donovani
2 amostigote form
3 leishman donovan bodies

① Tetanus caused by Clostridium Tetani

② Gram Positive rod with Terminal spore at the end, which gives it a Tennis Racket appearance.

③ Anaerobe

④ Prvention

ⓐ immunization with Tetanus Toxoid (Formaldehyde treated Toxin) in childhood (in combination with diphtheria Toxoid and acellular Pertussis vaccine – DTaP) + Every 10 years

ⓑ Trauma — wound cleaned and debrided + Tetanus Toxoid Booster given.
If wound is contaminated — Tetanus immune globulins (Tetanus antitoxin) + Toxoid Booster + Penicillin.

(*) Half of the immune globulin infiltrated into the wound and the other half given IM at a separate site from the Tetanus Toxoid.

Below is shown picture of a follicular carcinoma.

What is the only difference on gross examination which differentiates benign from malignant tumour. 1

Name one benign and one malignant epithelial tumour.1

What is teratoma 1

① Benign Tumor = capsulated
Malignant Tumor = uncapsulated.

② Adenoma = Adenocarcinoma (malignant)

③ The special type of mixed Tumor that contains recognizable mature or immature cells derived from more than one germ cell layer and sometimes all Three germ cell layers.

3rd YEAR MBBS

Parasitology

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate

Marks:

Time Allowed: 04 min.

Tasks:

1. Name the parasite having this ovum?
2. What are the complications caused by its infection?

1.tricuris tricura
2 T. Tricura
cause rectal
prolapse

3rd YEAR MBBS

SPECIAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

For Candidate

A child presented with rigid contraction of jaw muscles, preventing mouth from opening, accompanied by rigidity of neck & trunk muscles & arching of back. History revealed circumcision done in a local clinic in unsanitary conditions, a week ago.

1. Identify the disease and the causative agent. (1)
2. What is the characteristic appearance of this organism on Gram staining? ( ) (1)
3. Is it an aerobe or anaerobe? ( ) (1)
4. What are the modes of prevention of this disease? (1)

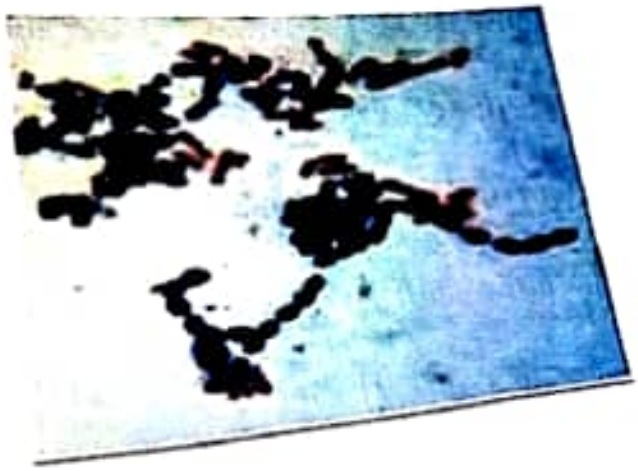
- YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

For Candidate:



Task:

Carefully examine the given slide/photograph and answer the following questions;

1. Name the staining reaction & enumerate its steps. (1)
2. Which component of bacteria is responsible for the difference in the colors of Gram pc Gram negative bacteria? (1)
3. Name one bacterium which stains red and one which cannot be stained by this tech
4. Is iodine used in this technique and what is its role in this technique? (1)

① Gram staining.

steps
- Primary stain = crystal violet.
- Mordant = Lugol's iodine / gram's iodine
- Decolourizer = Acetone alcohol
- secondary/Counterstain = safranine

② Peptidoglycan.

④ Three stages

ⓐ Primary = Local, nontender ulcer (chancre) Forms in 2-10 weeks which heals spontaneously.

ⓑ Secondary = 1-3 months later, maculopapular rash occurs Bilaterally on palms and soles or moist papules on skin and mucous membranes (on genitals - condylomata lata). Patchy alopecia occurs Fever, malaise, anorexia, weight loss, myalgias and generalized lymphadenopathy.
Pharyngitis, Nephritis, meningitis, hepatitis may also occurs.

ⓒ Tertiary

ⓘ Granulomas (Gummas) of skin and bones.

ⓘⓘ CNS involvement = Neurosyphilis (Tabes, paresis).

ⓘⓘⓘ CVS lesions = aortitis, aneurysm of ascending aorta.

3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04 **Time allowed: 04 minutes**

For Candidate:

A 20-year-old male was seen in the emergency department for fever, swollen lymph nodes, and a red maculopapular rash, which involves the trunk and extends to the palms of the hands. The patient is sexually active and admitted to unprotected sex over the last few months with a new partner. Dark field microscopy of material from the lesions showed organisms with the morphology shown.

1. What is the most likely etiology and infection? 1
2. What is the stage of the disease shown in this picture? 1
3. What is the mode of transmission of this disease? 1
4. What are the three stages of the disease? 1

① Treponema pallidum causes Syphilis.

② Secondary Syphilis.

③ Transmission

ⓐ pregnant women to Fetus.
ⓑ Blood for Transfusions collected in early syphilis.
ⓒ Spirochete-containing lesions of skin or mucous membrane (genitalia, Mouth, anus) of an infected person to other person by intimate contact.

[illegible] describes a localized mass on [illegible] is not [illegible] and has not increased in [illegible] for [illegible] could remember. It [illegible] described as a lipoma.

- [illegible]
- [illegible]
- [illegible]

D Benign in Nature

D Liposarcoma is malignant counterpart of lipoma.

) Paraneoplastic syndrome

Symptom complexes in individuals with cancer that cannot be explained by Tumor spread or release of hormones that are indigenous to Tumor cell or origin.

Example

Endocrinopathies = Cushing syndrome, Hypercalcemia

3rd YEAR MBBS

GENERAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

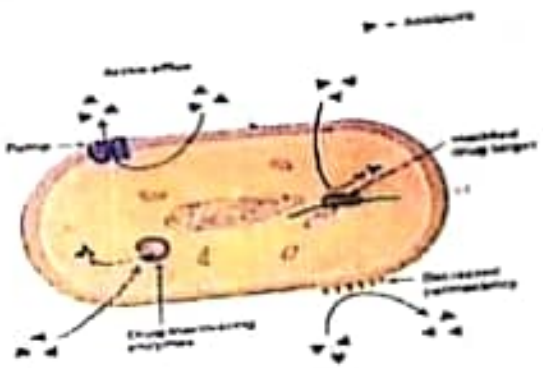
UNOBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

For Candidate:

A patient developed urinary tract infection with a gram negative rod and was put on ciprofloxacin, a quinolone. Besides having a treatment for 5 days, his condition did not improve.



1. What is the mechanism of resistance in quinolones?
2. Why Gram negative bacteria are more resistant as compared to Gram positive bacteria?
3. Which component of bacteria contains antibiotic resistance genes and what is their role?

(1) Multidrug resistance pump.
Mutation in DNA gyrase.

(2) Gram -ve Bacteria have outer membrane that prevents entery of drug into Bacterial cell. Also they transfer genetic Material more readily, so resistance genes of plasmid transmit to other species.

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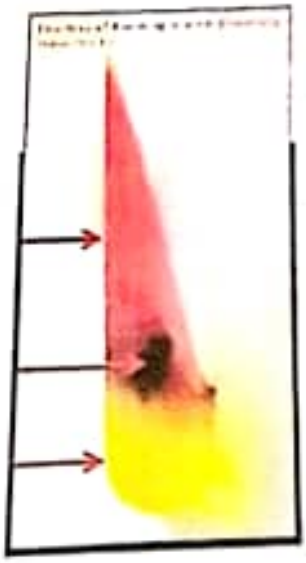
MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)
Unobserved Station

Marks: 04 **Time Allowed: 04 Minutes**

For candidate:

A 30 year old male suffering from low grade fever in step ladder fashion for the last three days. During the following weak rose spots developed on abdomen. TSI showed Acidic butt & alkaline slant with H2S production.



1. Name the causative agent.
2. What two other tools are used for the diagnosis of this organism.
3. Name one other H2S producing organism.

① Salmonella Typhi.
② Blood culture
Widal Test
Typhi dot.
③ proteus.

③ Gram -ve Bacteria stain red (e.g E.coli, Neisseria)

Bacteria can not seen on Gram staining

Bacteria Name	Reason	alternative Microscopic ap
① Mycobacterium Tuberculosis	Too much lipid in cell wall so dye cannot penetrate.	Acid-Fast/ZN stain.
② Treponema Pallidum	Too thin to see.	DARK-Field Microscopy or Fluorescent antibody.
③ chlamydiae (C. Trichomatis)	intracellular; very small	inclusion Bodies in cytoplas
④ Rickettsiae	intracellular; very small	Giemsa staining.
⑤ Mycoplasma Pneumonial	No cell wall; very small	None.
⑥ Legionella Pneumophila	Poor uptake of red counterstain.	prolong Time of counterstain.

④ iodine is a mordant which causes binding or chemical reaction of cell wall components with primary stain.

(4)

KEY

1. TSI/ TRIPPLE SUGAR IRON, DIFFERENTIAL MEDIUM
2. YELLOW= BUTT, RED= SLANT or Acidic Butt, Alkaline slant
3. YELLOW BUTT SHOWS GLUCOSE FERMENTATION, RED SLANT SHOWS NO FERMENTATION

3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

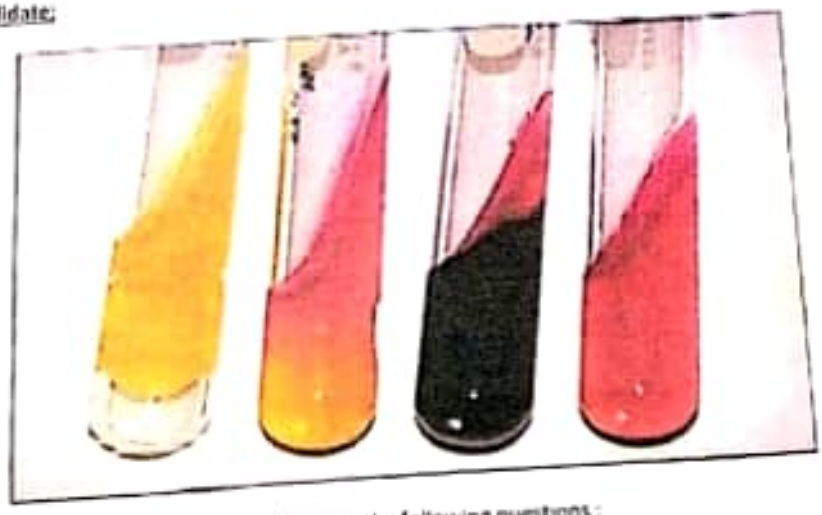
UNOBSERVERED STATION

For Candidate:

Time Allowed: 04 min

Marks 04

For candidate:



Carefully examine the photograph and answer the following questions:

TASK: 1 Name the media shown in the above picture.

2. What are the parts of the medium in dark pink and yellow color in 2nd tube from left?

3. What is the interpretation of the reaction shown in the 2nd tube from left?

...ure thickness of the epithelium is replaced by atypical dysplastic cells. There is no orderly ...and there is no tumor in the subepithelial stroma. (B) High-power view of another region ...r pleomorphism, and numerous mitotic figures extending toward the surface. The intact

Benign Swelling

Fig. 6.7 Fibroadenoma of the breast. The tan-colored, encapsulated small tumor is sharply demarcated from the whiter breast tissue.

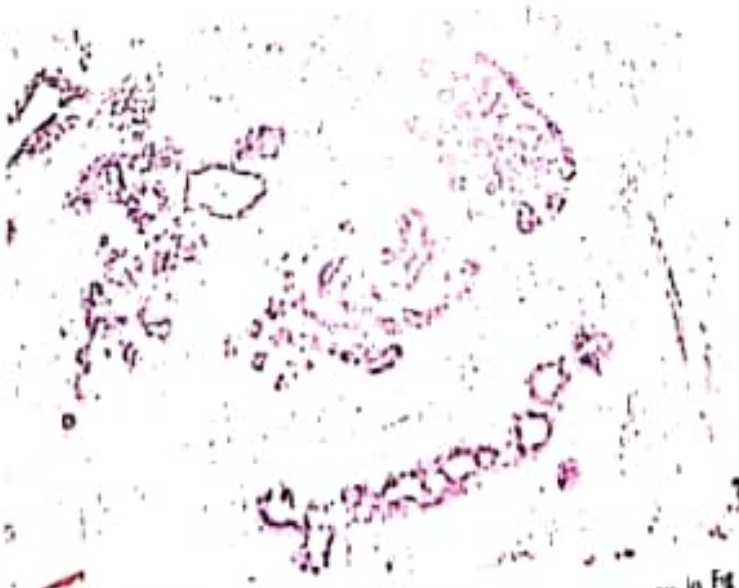


Fig. 6.8 Microscopic view of fibroadenoma of the breast seen in Fig. 6.7. The fibrous capsule (right) sharply delimits the tumor from the surrounding tissue. (Courtesy of Dr. Bruce Wuthrell, Department of Pathology, University of Texas Southwestern Medical School, Dallas, Texas.)

3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks: 04 Time allowed: 04 minutes

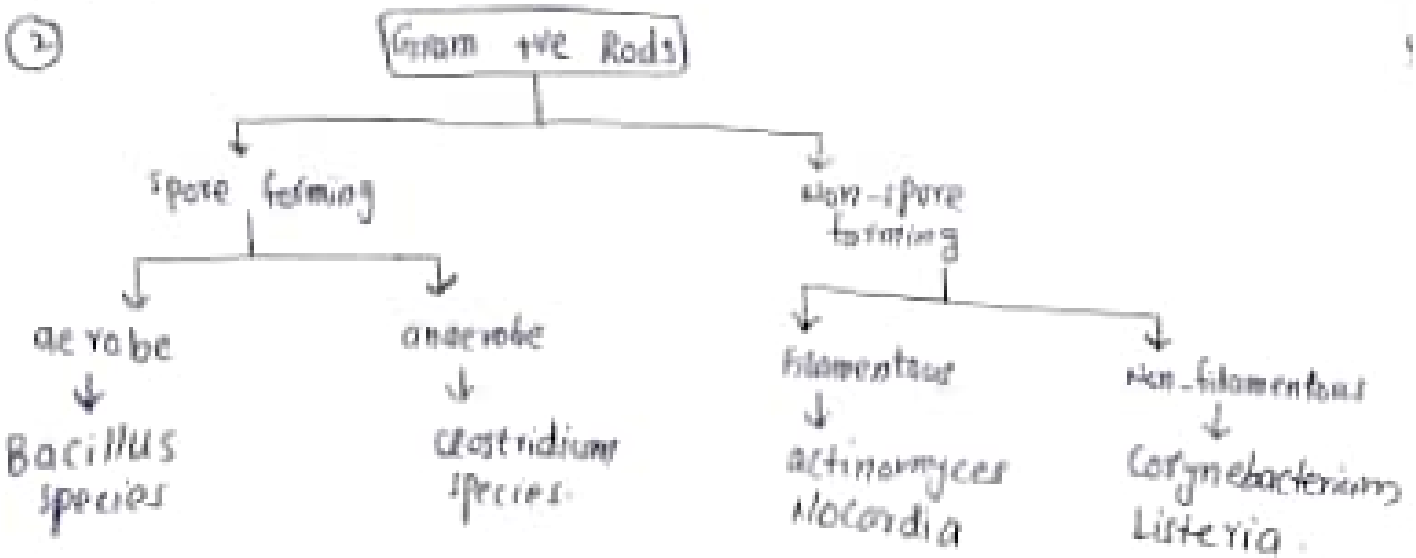
For Candidate:

Task:

1. Identify the micro organism and its staining reaction. (1)
2. Classify Gram positive rods. (2)
3. Name two bacteria which cannot be stained by gram staining. (1)
4. Name two diplococci. (1)

(1) Staphylococcus (as in cluster) stain purple.

(2)



(3) Mycobacterium Tuberculosis.
Treponema pallidum.

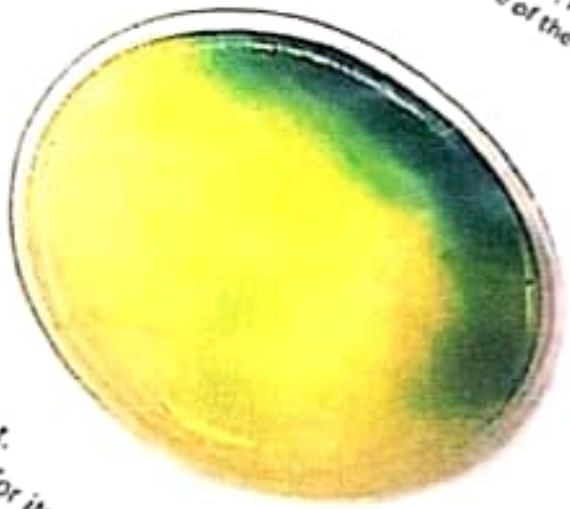
(4) S. pneumoniae
N. meningitidis

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)

Time Allowed: 04 Minutes

For candidate:

An elderly diabetic woman, who recently began swimming to control her weight, complains of painful discharge from her left ear. Physical exam shows extreme tenderness of the left tragus. A swab culture of the ear reveals blue-green colonies emitting a fruity odor.



1. Name the causative agent.
2. Name on biochemical test for its identification.
3. Name three pigments produced by this organism.
4. What is the picture of this organism on TSI?

① Pseudomonas aeruginosa.
② oxidase +ve
③ Pyocyanin, Pyoverdin, Pyorubin, Pyomelanin.
④ Red Butt, red slant, Typical Metallic sheen of growth on TSI.

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3rd YEAR MBBS

Immunology

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks 04

For candidates:

Time Allowed 04 mins

1. Which complement pathway is antibody dependent?
2. What are the functions of Membrane attack complex?
3. Name the anaphylatoxins produced by complement system and their functions?

Plasmids and Transposons.

Plasmids have resistance genes for antibiotics, heavy metals and UV-light. so they give resistance to Bacteria.

3rd YEAR MBBS
GENERAL PATHOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 min

a- What is the diagnosis 1 (A) Hypertrophy of Muscles.
b- Define it 1
c- What are the factors causing this condition. 2

(B) Increase in the size of cells that results in an increase in the size of the affected organ is called Hypertrophy.

(C) Mechanical stretch (increased work Load)
Growth Factors (IGF-1, TGF-β)
Agonists (α-adrenergic hormones, angiotensin)

Stat#1

3RD YEAR MBBS
PARASITOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

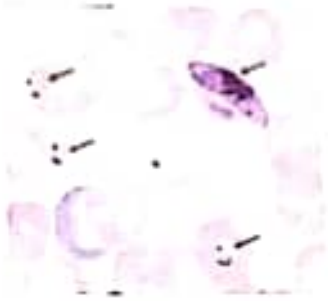
UNOBSERVERED STATION

For Candidate.

Marks 01

Time Allowed: 04 min

A twelve years old patient presented in emergency with high grade fever and chills. He had history of alternate day fever and generalized weakness. Laboratory diagnosis revealed slight anemia, thrombocytopenia and disturbed liver function tests. A thin smear stained by Giemsa stain showed Signet rings and banana shaped bodies inside RBCs.



Tasks:

Carefully examine the given slide / photograph and answer the following questions:

1. What is your diagnosis? 02 Malaria caused by P.Falsiparum

2. What are the complications caused by this specie? 02

3rd YEAR MBBS
Parasitology

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For candidate

Marks: 5[illegible]

Time Allowed: 5[illegible] min

For Candidate:

Tasks:

The patient shown in the picture has giant swelling on leg. this condition is most probably because of a parasite shown above.

1. What is the name of this parasite? 1
2. What is this condition shown in picture called? 1
3. What is the vector and intermediate host of this parasite? 2

1)Wucheria bancrofti
2)elephantiasis
3)mosquito vector and intermediate host

3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

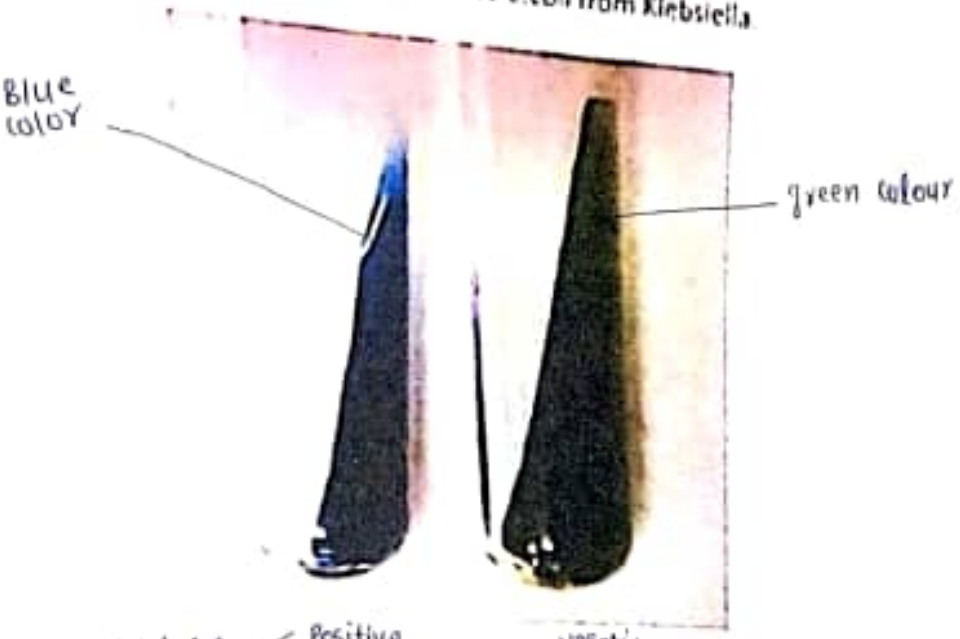
For Candidate

Marks: 04

For Candidate:

Time Allowed: 05 min

This biochemical test is used to differentiate E.coli from Klebsiella



A.

Carefully examine the photograph and answer the following questions

TASK:

1. Identify the biochemical reaction shown in the test 1 ① citrate Test.
2. What is the principle of this test? 1
3. Which bacteria are positive for this test and which is negative for the test? 2

Principle: This test is based on the ability of the microorganism to utilize citrate as the only source of carbon and ammonia as the only source of Nitrogen.

ner

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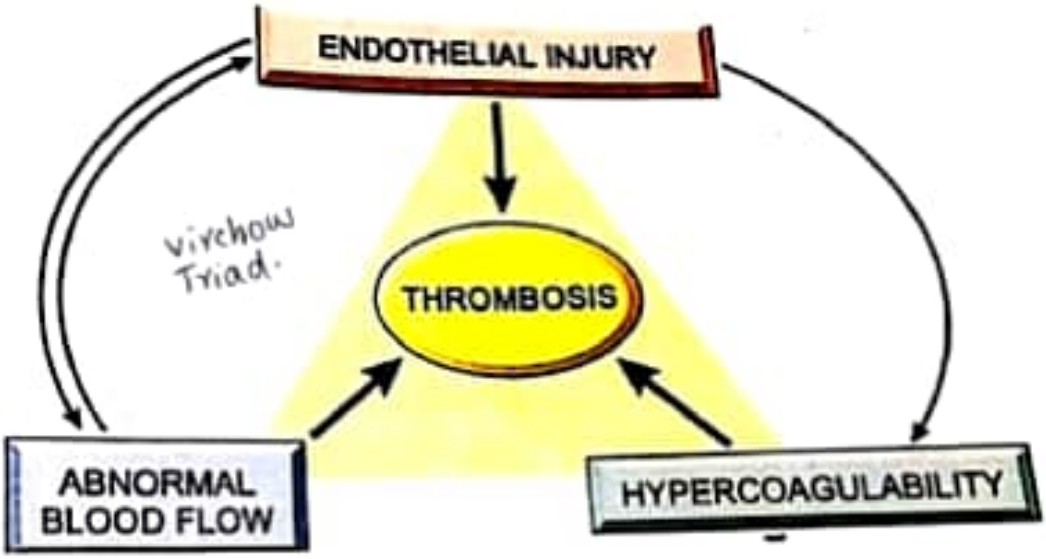
① Virchow Triad.

② Abnormal Blood Flow = Stasis (atrial fibrillation, bed rest)
Turbulence (atherosclerotic narrowing)

Hypercoagulability = inherited (Factor V Leiden)
Acquired (disseminated cancer)

Endothelial Injury = Hypercholesterolemia
inflammation.



A 56 YEARS OLD MALE HAD MYOCARDIAL INFARCTION AFTER THROMBOSIS OF CORONA

Q-1 THREE FACTORS ARE SHOWN ABOVE. WHAT IS THE NAME OF THIS TRIAD 1

Q-2 NAME ONE CAUSE EACH FOR THESE ABNORMAL FACTORS 3

① Virchow Triad:

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively Structured Performance Evaluation (OSPE)

Marks: 04

Time Allowed: 04 Minutes

Laboratory Station

For Candidate:

A [illegible] aged man visits his physician, complaining of long-term stomach pain. Discomfort is at its peak after meals. A radioactive diagnostic test confirms the presence of H. pylori and the following biochemical test was positive as shown in figure

Negative Positive

Tasks:

Carefully examine the photograph and answer the following questions:

1. Identify the biochemical test. 1 → Urease Test.
2. What is the principle of this test? 1
3. Name two other organisms which give a positive result in this test. 2

---

(2) Urease medium has pale yellow colour. If the Bacterial strain is Urease +ve then it's colour change to Pink. indicate that organism is Urease +ve.

(3) Proteus.
Enterobacter.
Klebsiella.

(Key)

① Classical pathway.

② Membrane attack complex (MAC) Forms a pore in the cell membrane and this opening results in the Killing/lysis of many types of cells including Erythrocytes, Bacteria and Tumor cells. This is due to disruption of Membrane and entry of water and electrolytes into the cell. Gram -ve Bacteria especially Neisseria are very susceptible.

③ C3a, C4a, C5a. They cause degranulation of mast cells with release of mediators (Histamine) leading to increased vascular permeability and smooth muscle contraction (Bronchospasm).

3rd YEAR MBBS
Immunology
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks 04

Time Allowed 04 min

A 10 year old child from a village is brought to a basic health unit complaining of shortness of breath, wheezing, and exertional dyspnea and occasional urticarial. History revealed intake of penicillin. He had past history of drug allergy.

a) Name the underlying hypersensitivity reaction. (1)

b) Which antibody is raised in this condition? (1)

c) Which mediators responsible for the symptoms? (2)

(a) Type-I Hypersenstivity (immediate)

(b) IgE

(c) Histamine
Serotonin
Slow reacting substance of anaphylaxis (SRS-A)
Prostaglandins
Thromboxanes
Platelet activating Factor (PAF)
Eosinophil chemotactic Factor of anaphylaxis (EcF-A)

1st YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

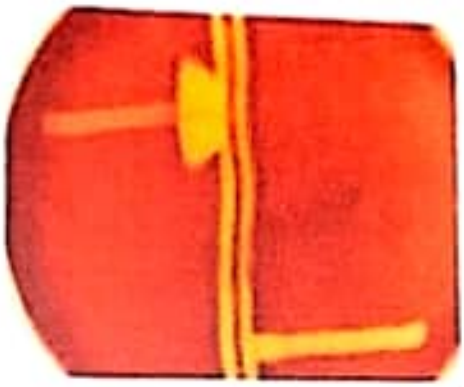
OBSERVERED STATION

Marks 01

Time allowed 04 minutes

For Candidate

A 2 r year old female from a rural area gave birth to a child who was suspected to have meningitis. The mother did not have any screening tests done during her pregnancy. The following test is positive



1 Name the following test (1)
2 Which Lancefield group of Beta hemolytic Streptococci is mainly responsible for causing meningitis in this age group? (1)
3 Which biochemical test is used to differentiate these bacteria from other beta hemolytic bacteria? (1)

(1) CAMP Test.

(2) Streptococcus agalactiae. (Group B)

(3) Bacitracin disc → S. Pyogenes → Bacitracin sensitive.
→ S. agalactiae → Bacitracin resistance.
+
CAMP Test.
only S. agalactiae give this test +ve.

Key:

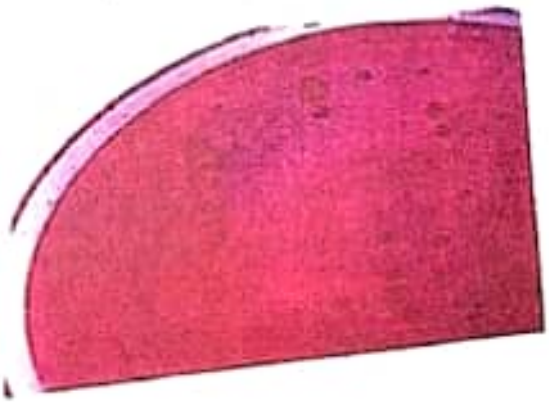
1. MacConkey agar
2. Lactose fermenters: E.coli, Klebsiella
3. Non lactose fermenters: Salmonella, Shigella

MBBS 2ND PROFESSIONAL
MICROBIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks: 04 Time allowed: 04 minutes

Carefully examine the media and answer the following questions:



1. Identify the media. (2)
2. Name two bacteria which produce lactose fermenting (pink) colonies on this medium. (1)
3. Name two bacteria which produces colourless colonies on this medium. (1)

3RD YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION

UNOBSERVERED STATION

For Candidate:

A child 3 years old is presented in general physician clinic with nocturnal anal pruritis and sleeplessness in night. The physician advised stool examination and perianal cellophane tape preparation. When the microbiologist called the patient for peri anal scotch tape preparation, he found organism as shown in the diagram..

1. What is the name of this organism? 2

2. What is the route of transmission of this organism? 2

1 Enterobous vermicularis
2 deco oral route

Feco-oral Route.

MBBS 2ND PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)

For Candidate:

A thirty years old female was admitted with burn. On clinical examination some wounds show bluish green discharge. Pus swab was culture. The isolate organism obtained is shown in picture.

Tasks:

Carefully examine the photograph and answer the following questions:

1. What is the most likely cause of this discharge. 1
2. Name the two pigments produced by this organism. 2
3. Name one biochemical test that can help in the identification of this organism. 1

(1) wound infection (cellulitis) in Burn patient caused by Pseudomonas Aeruginosa.

(2) Pyocyanin = That colors the Pus in a wound Blue.
Pyoverdin = A yellow-green Pigment which Fluoresces under
Pyorubin UV-light.
Pyomelanin

(3) → Oxidase +ve
→ Red Butt, Red slant on TSI.
→ Fruity aroma.
→ Typical Metallic sheen of growth on TSI agar.
→ Non-Lactose fermenting colonies on MacConkey's agar.
→ indole, MR, VP, H_2S Tests are negative.

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3rd YEAR MBBS

Immunology

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks 04

Time Allowed 04 min

For Candidate

① Microtitration Plate.

TASK:

You are shown a device used in serological tests.

1) Identify the given device (01)

2) Name the serological technique in which it is used. (01)

3) Give FOUR clinical applications of this technique. (02)

② ELISA – double antibody / sandwich Technique or indirect ELISA.

③ Clinical Applications

ⓐ HepB$_s$Ag.
ⓑ anti-HIV antibodies.
ⓒ anti-HCV antibodies.
ⓓ Rota virus antigen in stool.

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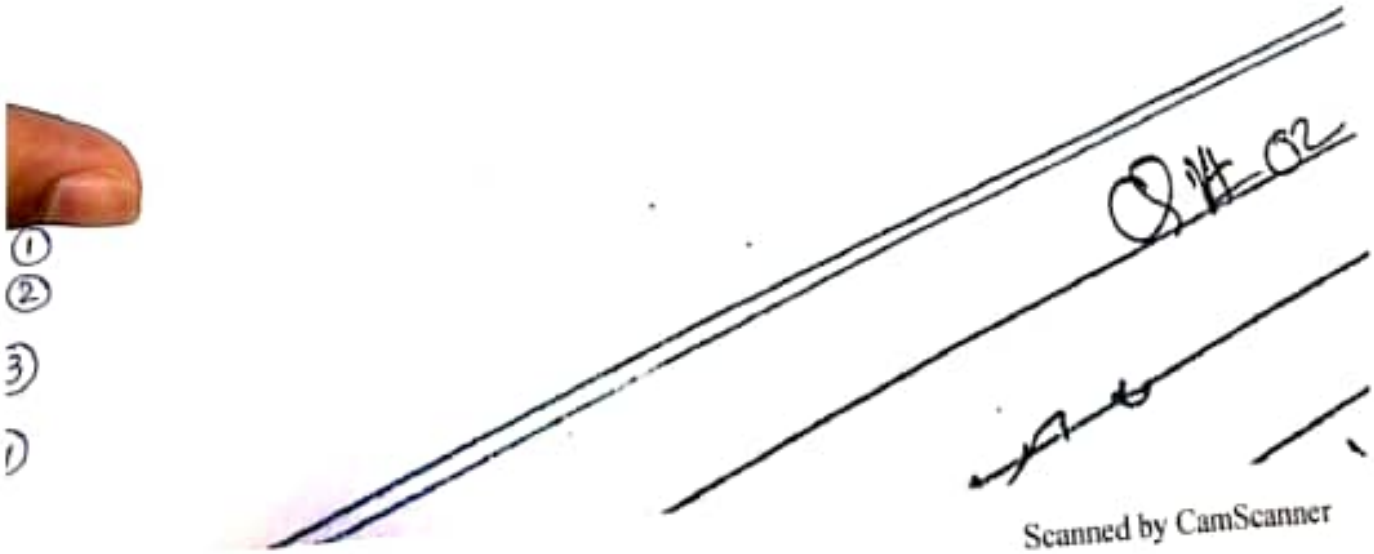
A 35years old man suffered with acute abdomen pain and was operated in emergency an appendix was removed.

A) see the images and describe the most likely diagnosis of lesion.

b) what will be the cellular infiltrate of this lesion.

(A) Acute appendicitis — suppurative/purulent inflammation.

(B) Neutrophils.



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3rd YEAR MBBS

SPECIAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

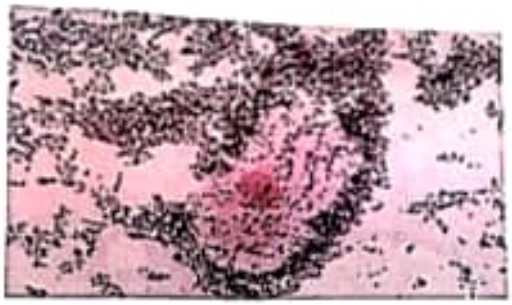
OBSERVERED STATION

Marks: 03

Time allowed: 04 minutes

For Candidate

A female had continuous complaint of thin, grey colored vaginal discharge, having a fishy odor. Gram Staining of vaginal discharge revealed the following result.



1. Name the following cells and the causative agent. (1)
2. What is vaginosis? (0.5)
3. State two other causes of vaginitis. (1)
4. Name the flora of vagina which maintains the vaginal pH. (0.5)

(1) clue cells and causative agent is Gardnerella vaginalis.

(2) Vaginosis is characterized by Malodorous vaginal discharge and clue cells.

(3) Trichomonas vaginalis
Candida albicans.

(4) Lactobacilus

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3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALU.

OBSERVERED STATION

Time allowed 0[illegible]

(1) Nocardia asteroids causing Nocardiosis

1. What is the most likely etiology and infection?
2. What is the morphology of the bacterium shown?
3. What is the pathogenesis behind of this disease?

~~1. Mycobacterium Tuberculosis causing Tuberculosis.~~
~~2. Long slender red colour rod on ZN-Staining~~
~~3. Caseating Granuloma.~~

(2) Gram +ve rod Branching and weak acid fast.

(3) Lung absess with cavity formation
Lung Nodules
Empyema.

3rd YEAR MBBS
SPECIAL BACTERIOLOGY *
OBJECTIVE STRUCTURED PERFORMANCE EVALU ..OSPE]

OBSERVERED STATION

Marks: 03 Time allowed 03 minutes

For Candidate

A young man very fond of canned smoked fish and mushrooms, developed diplopia, dysphagia and descending weakness ending up in flaccid paralysis, few days after this meal

④ Botox = Commercial preparation of exotoxin A used to remove wrinkles on face.
used in t/m of writer's cramp, Torticollis and Blepharospasm.

1. Name the bacteria responsible for his condition and the disease. (0.5)
2. How does the toxin of this bacteria works? (1)
3. Can the toxin produced by these bacteria be destroyed by heating or cooking? (0.5)
4. What are two uses of this toxin? (1)

① Clostridium Botulinum.
② Botilinum Toxin Blocks the release of acetylcholine causing flaccid paralysis.
③ Toxin relatively heat labile, inactivated by heat.

4TH YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

For Candidate:

A 40-year-old Bay male with AIDS presents to the emergency department with fever, chills, night sweats, and weight loss. Because he is homeless and an IV drug user, his HIV has not been well controlled. The patient is isolated and specimens are collected for analysis. His CD4+ T cell count is 100 cells per/ul, and his sputum specimen is positive for acid-fast bacilli. Slow growth appears on plates resembling that shown.

1. What is the most likely etiological agent and infection? 2
2. Name the staining technique. 1
3. What chemical compound in the bacterial envelope makes the bacterium shown acid-fast and resistant to desiccation?

① Mycobacterium Tuberculosis causing Tuberculosis.

② Acid-fast staining - Kinyoun version or Ziehl Neelsen version.

③ The high lipid content (approximately 60%) of their cell wall gives the organism ability to retain the carbolfuchsin stain despite subsequent treatment with ethanol-HCl mixture.

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3rd YEAR MBBS
GENERAL PATHOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 min

TASK

1. Examine the focused slide and identify the pink material in the centre of lesion. (01)
2. Name two important cells found in this type of lesion. (1)
3. Write down names of two other this types of lesions.(2)

1. Caseous Granuloma with central zone of Necrosis.
   → Grossly it has a granular, cheesy appearance
   → Microscopically it is amorphous, structureless, Eosinophilic granular debris with complete cellular details.
2. Epithelioid cells and Langerhans gaint cells.
3. Non-caseating granuloma and Fibrotic Granuloma or Foreign Body and immune granuloma.

3rd YEAR MBBS

SPECIAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 03

Time allowed: 04 minutes

For Candidate

A patient presented with inflammation of throat, with a fibrinous exudate and gray pseudomembrane causing shortness of breath and respiratory distress. Gram staining of pus revealed Gram positive rods having Chinese letter appearance.

1. What is the causative agent and the disease? (1)
2. What are metachromatic granules? (0.5)
3. Name the technique used to stain it, other than gram staining. (0.5)
4. What is the mechanism of action of its exotoxin? (1)

(1) Corynebacterium diphtheriae causing diptheria.

(2) Organism is beaded, have granules of highly Polymerized polyphosphate — store of high Energy Phosphates. Granules stain metachromatically. granules stained red with methylene Blue and rest of cell Blue.

(3) Methylene Blue stain.

(4) The exotoxin has A and B subunit and inhibits protein synthesis by ADP-ribosylation of elongation factor-2 (EF-2).

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Scanned with CamScanner

Key

1 Clostridium difficile

2 Gram positive Rod / Bacillus

3 Gram positive Rods

Spore forming

Non-spore forming

Flagellated

- Bacillus
- Actinomycetes

Non-flagellated

- Corynebacterium diphtheriae
- Listeria

3rd YEAR MBBS

SPECIAL BACTERIOLOGY

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Time allowed: 04 minutes

Marks: 03

For Candidate

A patient receiving chemotherapy for breast carcinoma developed non-bloody diarrhea, fever & abdominal cramping. On agar-blood pseudomembranes (yellow-white plaques) were seen on colonic mucosa.

1. Name the causative agent. (0.5)
2. Is it a Gram positive rod or cocci? Is it aerobe or anaerobe? (0.5 +0.5)
3. Classify Gram positive non-spore forming rods. (1.5)

① clostridium Difficile

② Gram +ve anaerobic rod.

OSPE STATION

HEMODYNAMICS

A 50 YEAR OLD MALE DIED SUDDENLY. AUTOPSY WAS PERFORMED AND SOME THING HIS PULMONARY ARTERY.

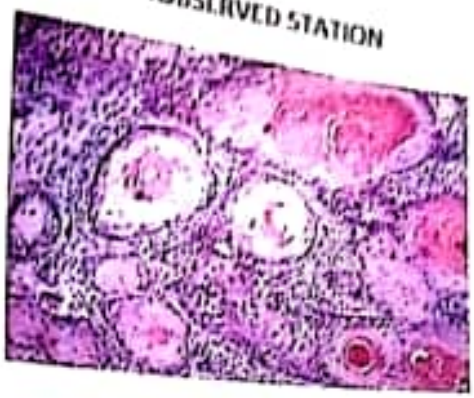
Q-1 WHAT IS THE DIAGNOSIS ?

Q-2 WHAT IS A FATE OF A THROMBUS. ?

① Pulmonary Embolism

② propagation
Embolization
Dissolution
organization and Recanalization.

UNOBSERVED STATION



Carefully examine the given photomicrographs of skin biopsy from a patient with suspected malignancy.

1. Identify the lesion. 1
2. Name the characteristic features of this neoplasm (seen in the photomicrograph). 1
3. Name one benign & one malignant tumor (composed of one parenchymal cell type) arising from smooth muscles & striated muscles. 2

(1) squamous cell carcinoma.

(2) intercellular bridges and Nests of Keratin.

	Benign	Malignant
(3) Smooth Muscle	Leiomyoma	Leiomyosarcoma.
striated Muscle	Rhabdomyoma	Rhabdomyosarcoma.

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3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04

Time allowed: 04 minutes

For Candidate

A 17-year-old male was seen at his primary care physician's office suffering from conjunctivitis. The patient also notes that he has had difficulty urinating and a white urethral discharge for 2-3 days. The urethral swab specimen contained numerous PMNs, some with intracellular bacteria

1. Name the causative agent. 1
2. What is the most likely infection? 1
3. What is the cell morphology of the bacterium shown? 1
4. Name two biochemical tests used for its diagnosis. 1

(1) Nisseria Gonorrhae.

(2) Gonorrhea.

(3) Gram -ve diplococci inside the Neutrophils.

(4) oxidase +ve.
Glucose fermenter.
Maltose fermentation -ve.

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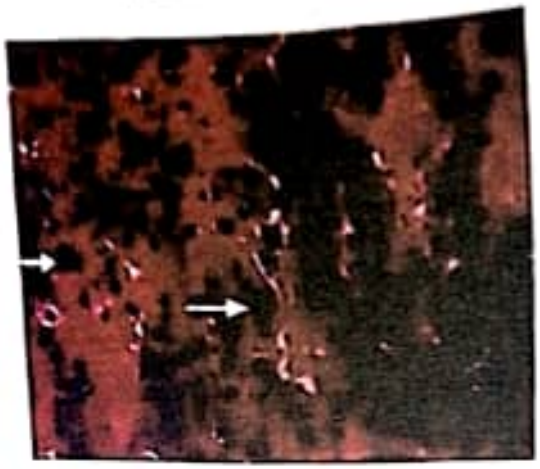
Unobserved Station



A 40 years old woman came to OPD for regular screening of cervical carcinoma. PAP smear was done. Cytology revealed irreversible change in size and shape of cells.

(1) What is this process called and define it. (2)
(2) What is the difference between anaplasia and dysplasia? (2)

(1) Anaplasia Lack of differentiation or an irreversible change in size and shape of cells.

(2) Loss of uniformity of individual cells and loss of their architectural orientation is called dysplasia.

Scanned by CamScanner

PROFESSIONAL

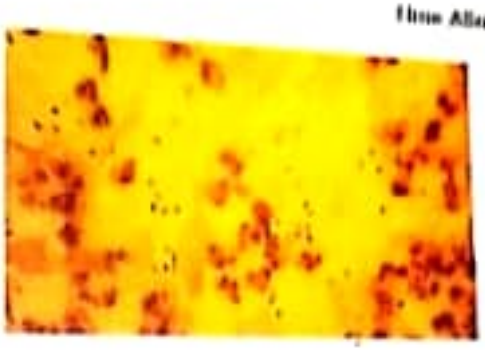
GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively structured Performance Evaluation (OSPE)

Unobserved Station

Marks: 04

Time Allowed: 04 Minutes



For Candidate:

This is a stained cerebrospinal fluid sample from a 14 year old female admitted in a medical ward with clinical suspicion of meningitis.

Tasks:

Carefully examine the photograph and answer the following questions:

1. What is the name of the staining procedure that has been carried out on the CSF sample. 1
2. What is the most likely organism causing the patient disease? 1
3. Give any two characteristics of this organism. 2

(1) Gram staining

(2) N. Meningitidis

(3) Maltose fermenter, oxidase +ve, capsular Test +ve. diplococci.

3rd YEAR MBBS

SPECIAL BACTERIOLOGY

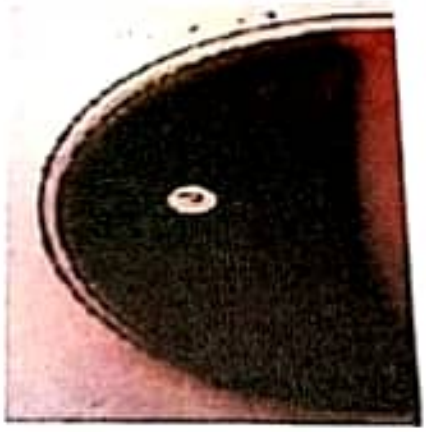
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 03 Time allowed: 04 minutes

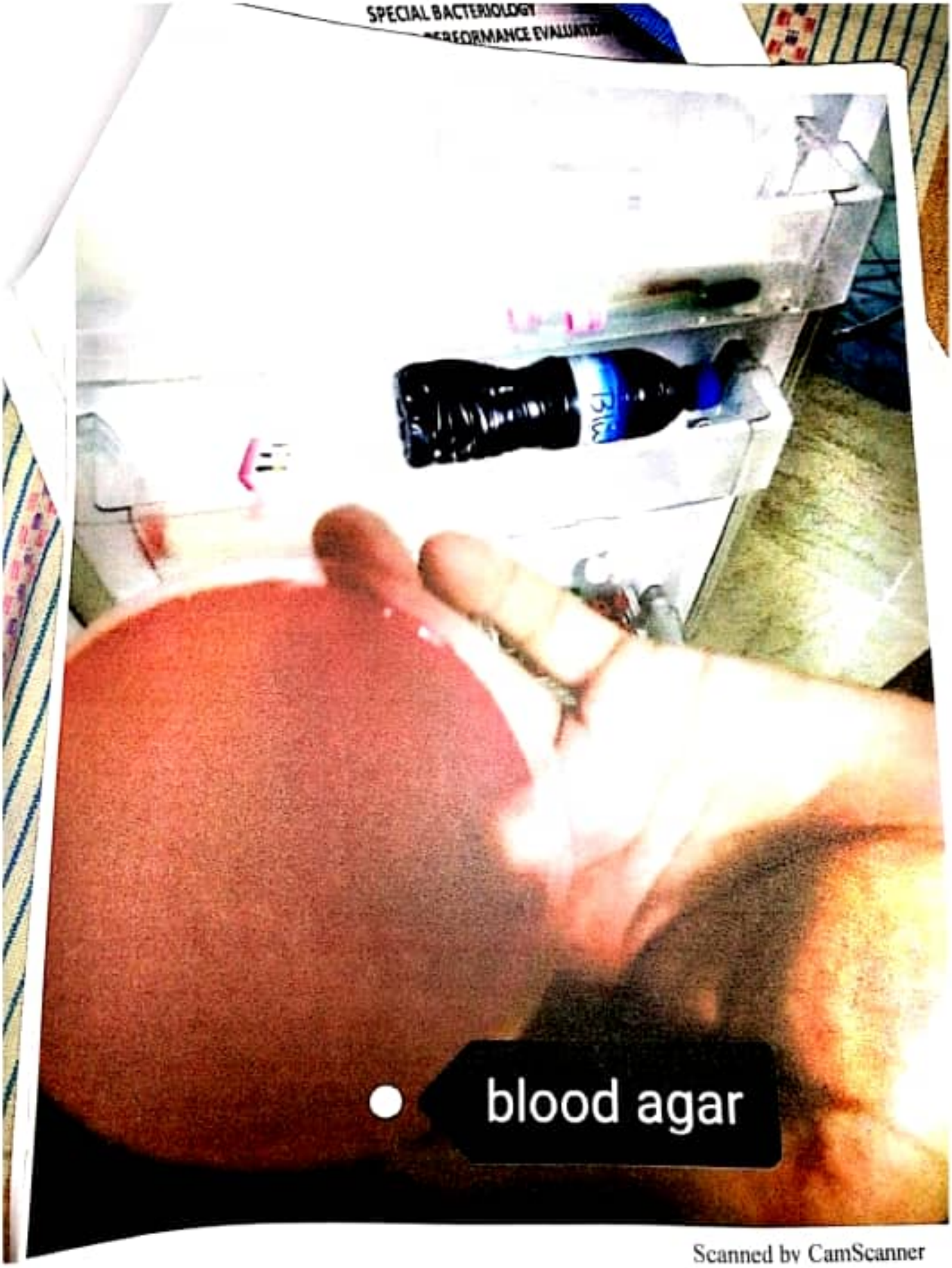
For Candidate

A retired army officer went to the dentist for extraction of his wisdom tooth. The extraction went perfect, but 2 weeks later he started having chest pain, and high grade fever. The organism obtain was optochin resistant.



1. Name the pathogen. (1)
2. Is it alpha or beta hemolytic? (1)
3. Where is this organism present as flora? (1)

(1) streptococcus viridans.
(2) alpha hemolytic
(3) Mouth, Nasopharynx.



Scanned by CamScanner

3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04 **Time allowed: 04 minutes**

For Candidate

A 19-year-old college student who lives in a dormitory is taken to the emergency department. He has a fever, photophobia, neck stiffness, and myalgias.. CSF samples were collected and stained, and Gram-negative diplococci were noted within PMNs. Culture on chocolate agar, and the resulting colonies demonstrate the morphology shown.

1. What is the most likely etiology and infection? 1
2. What is the morphology of the Gram-stained bacterium shown? 1
3. Is the organism maltose fermenter? 1
4. Name one biochemical test used for its diagnosis. 1

(1) Meningitis caused by N.meningitidis.
(2) Gram -ve diplococci with the Polymorphnuclear cells.
(3) Yes, Maltose fermenter.
(4) oxidase +ve, Maltose fermenter.

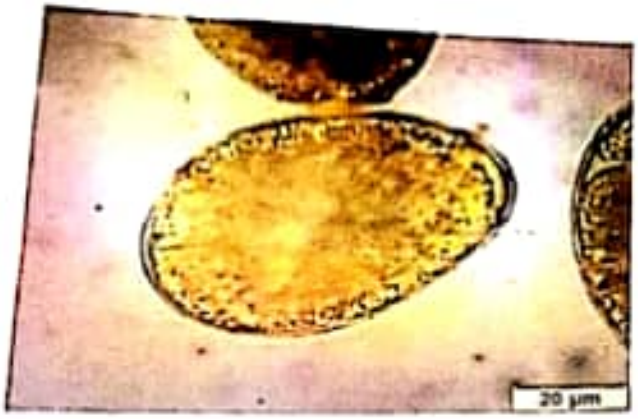
UNOBSERVERED STATION

For Candidate:

Marks 04

For Candidate:

Time Allowed 04 min



Tasks:

1. Which parasite has this operculated ovum?
2. Which anemia is caused by this organism?

Diphylobotrium latum

Megaloblastic anemia

Carefully examine the given slide and answer the following questions:

a. What is the use of this container in microbiology laboratory? (1)
b. Write the principle of glucose estimation in urine dipsticks. (2)
c. Name the media used for urine culturing. (1)

(A) Wide Mouthed Urine container used to collect urine sample.

(B) Glucose + O_2 ⟶ Gluconic acid + H_2O_2

H_2O_2 + Orthotoluidine ⟶ Colored compound + water.

(C) Cysteine Lactose Electrolyte deficient media (CLED)

MBBS 2ND PROFESSIONAL
MICROBIOLOGY
ANCE EVALUATION (OSPE'

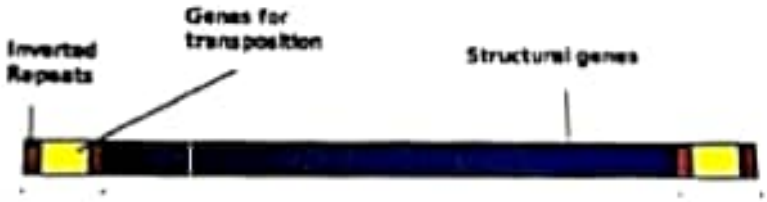
3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks: 04 Time allowed: 04 minutes

For Candidate:

An old chronic diabetic patient having a diabetic foot landed in the hospital for the treatment of his foot. Besides taking antibiotics since last month, there was no improvement in his wound.



Task:

1. Which mobile DNA units in the bacteria, capable of replicating independently are responsible for resistance to antibiotics? (1)
2. What is a bacteriophage? (1)
3. Define conjugation. (1)
4. What is transformation? (1)

① Plasmids

② A Bacterial virus capable of Transferring cellular DNA.

③ Conjugation is the mating of Two Bacterial cells, during which DNA is Transferred from the donor to the Recipient cell.

STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

For Candidate:

Marks 04

Time Allowed 04 min

a- What is the diagnosis 1

b- Define it 1

c- What are the factors causing this condition. 2

(a) physiologic hypertrophy of uterus during pregnancy.

(b) increase in the size of cells that results in an increase in the size of the affected organ.

(c) Mechanical stretch (increase workload)
Agonists (alpha adrenergic hormones, angiotensin)
Growth Factors (IGF-1, TGF-β).

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3rd YEAR MBBS
GENERAL PATHOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Station (Unobserved station)

For Candidate:

Marks 04 Time Allowed 04 min

① Atrophy.
② Atherosclerotic cerebrovascular disease resulting in reduced blood supply.
④ A reduction in size of an organ or tissue due to decreased in cell size and number, is called atrophy.

Task:

4. You are shown a specimen of brain, identify the lesion(1)
5. What is the name of disease in which this specific change can occur and define the process(02
6. Name other causes of this type of lesion. (1)

③ → decreased workload (atrophy of disuse)
→ Loss of innervation (denervation atrophy)
→ diminished Blood supply.
→ inadequate Nutrition.
→ pressure.
→ Loss of Endocrine stimulation.

KEY:

1. Vibrio cholerae
2. TCBS
3. Oxidase test positive

MBBS 2nd PROFESSIONAL

GENERAL PATHOLOGY AND MICROBIOLOGY

Objectively structured Performance Evaluation

Unobserved Station

Marks: 04

For candidate:

After recent flooding in a slum area of Faisalabad, ther... patients in the emergency department of DHQ hospita... the laboratory having rice water stools. Following gr... culture media.

1. Name the causative agent.
2. Name this selective media used to culture this organism
3. Name one biochemical test used for its diagnosis.

① Vibrio cholerae

② Thiosulphate citrate Bile salt (TCBS) Agar.

③ Oxidase +ve

acidic Butt, acidic slant, Gas -ve, H_2S -ve on TSI.

KEY

1. Klebsiella pneumoniae
2. Citrate and VP positive. Indole and motility test negative
3. Streptococcus pneumoniae and Haemophilus influenzae

MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)
Unobserved Station

Marks: 06 **Time Allowed: 04 Minutes**

For candidate:

An alcoholic presents with a fever, pleuritic chest pain, dyspnea, and cyanosis. His cough produces bloody "currant-jelly" sputum. CXR shows inflammation involving the right upper lobe with possible cavities. Gram stain revealed Gram negative lactose fermenting rods having mucoid colonies.

1. Name the causative agent
2. Name the biochemical tests for its identification
3. Name two other organisms causing pneumonia

(1) Klebsiella Pneumoniae.
(2) Citrate +ve, VP +ve
Motility -ve, indole -ve.
(3) Streptococcus Pneumoniae
Haemophilus influenza.
Pseudomonas Aeruginosa.

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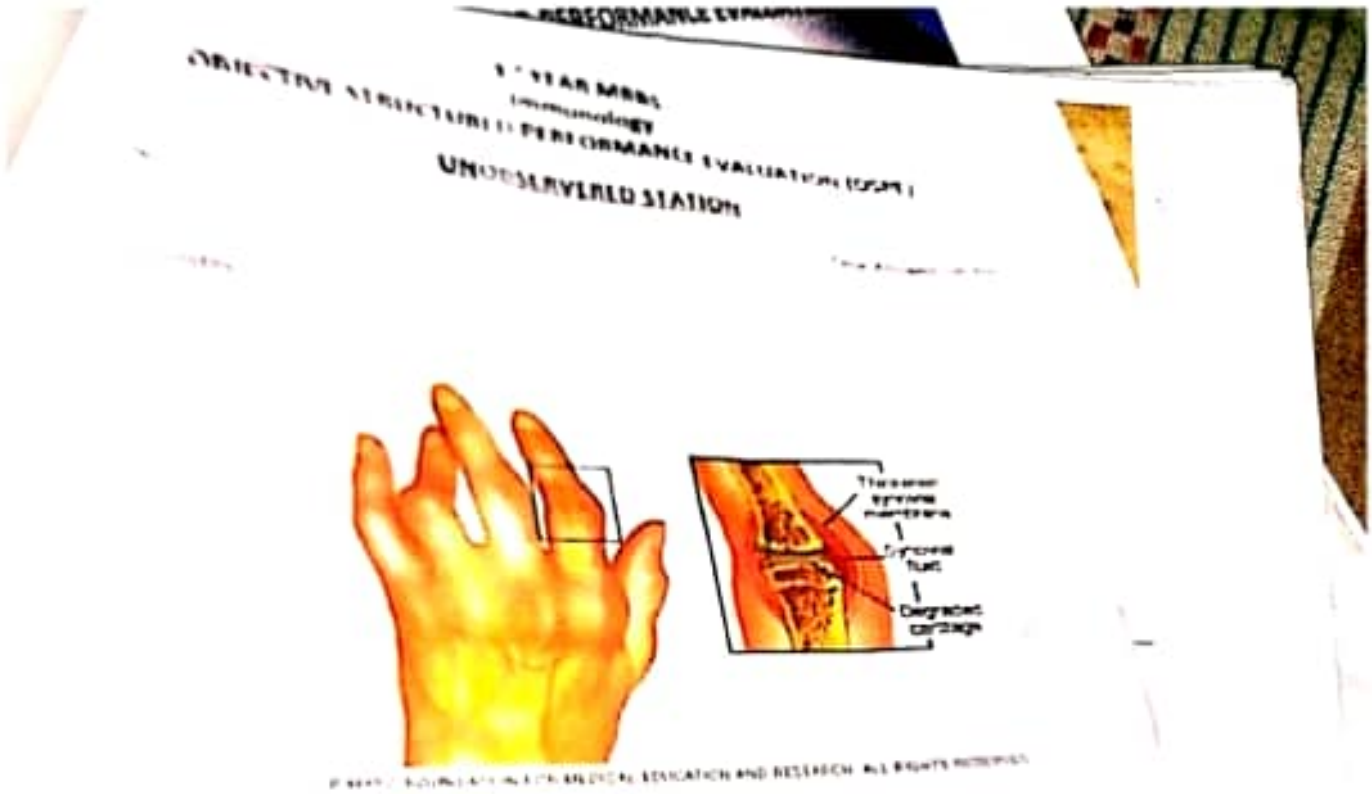
Granuloma Formation

1. Response of immune system to an indigestible agent.
2. Usually Neutrophils remove agents by phagocytosis and digestion.
3. Macrophages phagocytose indigestible agents, loose their mobility and accumulate at site of injury.
4. Undergo structural changes: Large with more cytoplasm and become epithelioid cells.
5. Epithelioid cells Fuse → Multinucleated Giant cells.
6. Nuclei arrange in horse shoe pattern → Langerhans gaint ce
7. All these cells are surrounded by a collar of lymphocytes.

Principle of Maltose Fermentation

The maltose fermentation Broth results showed an acid Byproduct produced. This was indicated by the color change of methyl red from red to yellow.

This results also showed gas production, indicated by the gas trapped in the Durham Tube, which displaces the medium.



- What is the diagnosis?
- Which autoantibodies present in the disease?
- What is the mechanism of the disease?

① Rheumatoid arthritis.

② Rheumatoid Factor (RF)
anti-citrullinated Peptide antibodies (AcpA).

③ Autoantibodies binds with Fc fragment of Normal IgG1 antibody and form an immune complex. This immune complex deposits in Synovial membrane of Joints and activate Complement system and attract Polymorphonuclear cells causing inflammation.

1st YEAR MBBS

OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04 Time allowed: 04 minutes

A patient is suffering from pulmonary tuberculosis. A pathognomic histological lesion is produced in his lungs.

a) Which type of hypersensitivity reaction is responsible for producing this lesion. 2

b) Describe the mechanism of formation of this lesion. 2

① Type-IV: Delayed (cell mediated) hypersenstivity.

② Granuloma Formation.

Ⓐ Phagocytosis of Bacilli

↓

Ⓑ TNF-α release and autocrine stimulation

↓

Ⓒ cytokines and chemokines release
→ attraction and stimulation of CD4 and CD8 lymphocytes, γ/δ lymphocytes
→ increased T-cell adhesion, antigen presentation proliferation and recruitment of T and B cells.

↓

ⓓ activated T-cells release interferon-γ
furthur activating macrophages.
increase antigen presentation
increase intracellular killing of Bacilli.
Macrophage apoptosis.
granuloma formation.

MBBS 2ND PROFESSIONAL
HEMODYNAMICS
Objectively structured Performance Evaluation (OSPE)
Unobserved Station

Marks: 06 Time Allowed: 04 Minutes

For Candidate:

A 53 years old man had severe crushing chest pain & sweating. He has arrhythmias & dies in emergency. An autopsy is done & photomicrograph of coronary artery is shown.

Task: Carefully examine the given photomicrograph and answer the following questions:

i. What is the cause of his symptoms? 1.5

ii. Define embolus 2.5

(i) atherosclerosis
hypercoagulation

(ii) An Embolus is a solid, liquid or gaseous mass carried by the Blood to a site distant from its origin

KEY:

1. Salmonella typhi
2. Blood culture
   Typhi dot
   Widal test
3. Proteus

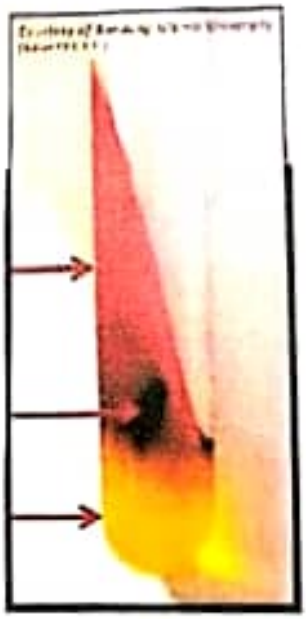
MBBS 2nd PROFESSIONAL
GENERAL PATHOLOGY AND MICROBIOLOGY
Objectively structured Performance Evaluation (OSPE)
Unobserved Station

Time Allow[illegible]

Marks: 04

For candidate:

A 30 year old male suffering from low grade fever in step ladder fash
last three days. During the following weak rose spots developed on a
showed Acidic butt & alkaline slant with H2S production.



1. Name the causative agent.
2. What two other tools are used for the diagnosis of this organism.
3. Name one other H2S producing organism.

3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

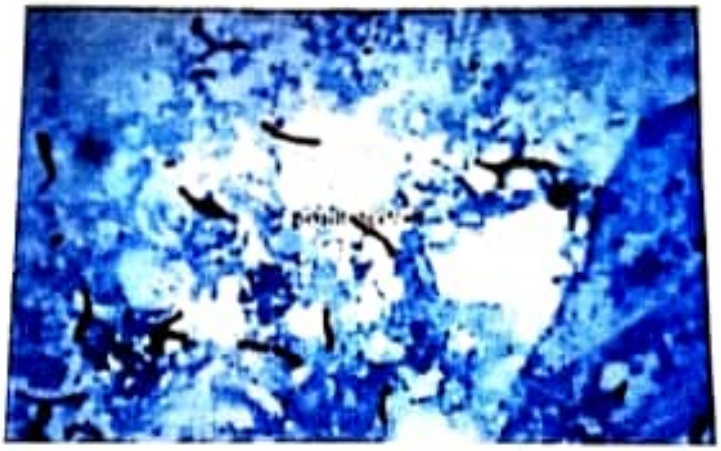
OBSERVERED STATION

Marks: 04 **Time allowed: 04 minutes**

For Candidate:

You are shown a preparation made from sputum of a patient suffering from cough and fever for last three months. Examine the following slide and answer the following questions:

1. Name the staining technique. 1
2. Give the findings. 1
3. Name two other organisms with same staining reaction. 2



① Acid-Fast stain / ZN-staining Technique.

② Acid Fast staining showing long, slender red coloured rods.

③ ① Nocardia
② Cryptosporidium
③ Spores of Bacteria
④ Isospora
⑤ Cyclospora.

3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

OBSERVERED STATION

Marks: 04 Time allowed: 04 minutes

A patient suffering from atypical pneumonia shows the following findings on chest x-ray. The bacterium suspected has no cell wall.

For Candidate:

1. Name the causative agent. 2
2. What class of antibiotics cannot be used to treat infections caused by the genus of bacterium shown? 2

① Mycoplasma pneumoniae.

② cell wall synthesis inhibitors (penicillin, cephalosporins) are Not used against this organism.

(4) Transfer of genetic material (DNA) itself from one cell to another and can alter the genetic makeup of the recipient cell is called Transformation.

SPECIAL BACTERIOLOGY

3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks: 04

Time allowed: 06 minutes

For Candidate:

A canula was passed in hospitalized unconscious patient, without proper disinfection of the skin.

TASK:

1. What are the opportunistic pathogens? (1)
2. Which agent is used to disinfect the skin before venepuncture? (1)
3. Name any chemical which is used in the laboratory to kill spores. (1)
4. Name one gas which can be used as a sterilizing agent. (1)

① Opportunistic Pathogens are those that rarely cause disease in immunocompetent people But can cause serious infections in immunocompromised patients.

② 70 %. Ethanol.

③ Formaldehyde, Glutaraldehyde.

④ Ethylene oxide.

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① The organisms that require additional (5-10%) CO_2 for their growth are called carboxyphilic organisms.

Example

Campylobacter jejuni.
Hyllicobacter jejuni.

② Candle Jar / CO_2 Jar.

③ The organisms that grow strictly in the absence of O_2 are called strict anaerobes.
e.g Clostridium species.

④ Any organism that has complex or particular nutritional requirement is called Fastidious organism.

Example

Neisseria species
H. influenza.

3rd YEAR MBBS
GENERAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)

UNOBSERVERED STATION

Marks: 04 **Time allowed: 04 minutes**

For Candidate:

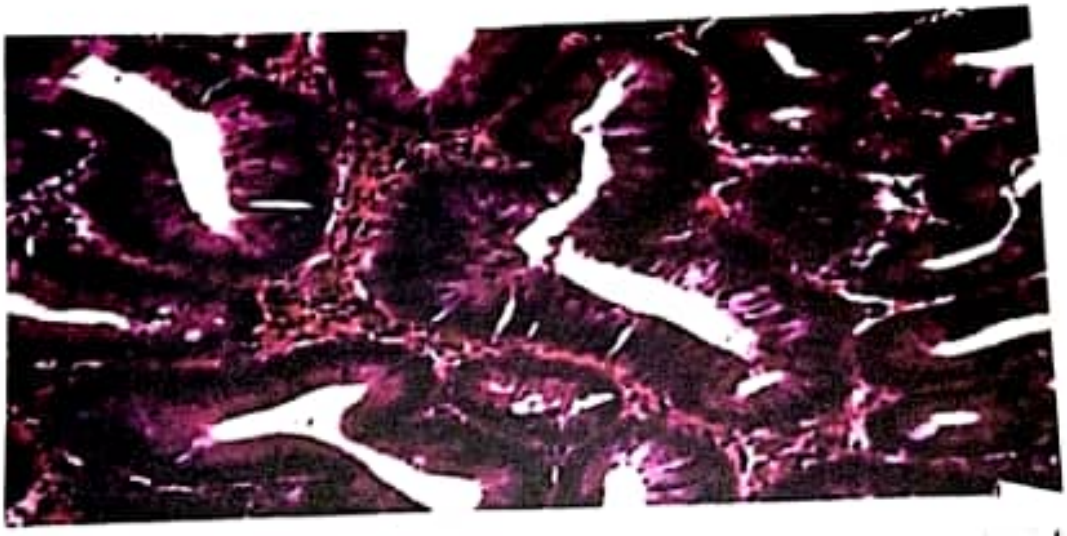
A specimen was received in the laboratory suspected to have a carboxyphilic organism.

Task:

1. What are carboxyphilic/capnophilic organisms? Name one. (1)
2. Identify the object. What is its use in microbiology? (1)
3. What are strict anaerobes? Name one strict anaerobe. (1)
4. What are fastidious organisms? (1)

A 20 year old boy developed multiple polyps in intestine. One o
out to be malignant.

The picture is shown below



1- Name the tumour. 1 (adenocarcinoma)
2- What are three grades of a tumour. 3

rade I = well differentiated, clear cell Boundries, rare mitotic Figures 93% survival >1500 days. Appear Normal, Growing slowly, not aggressive.

ade II = intermediate differentiation, closely packed cells, infrequent mitotic Figures, moderate intracellular granules. 47% survival > 1500 days semi-Normal, growing moderately fast.

ade III = Undifferentiated, Poorly distinguished cells Boundries, Frequent Mitotic Figures, few intracellular granules 6% survival >1500 days. abnormal, growing Quickly, aggressive.