RAN-2106000102020101

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IInd M.B.B.S. Examination January - 2023

Department of Pharmacology, (Paper -I)

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

(1) નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ IInd M.B.B.S.

Name of the Subject :

☛ Department of Pharmacology, (Paper -I)

Subject Code No.: 2106000102020101

Seat No.:

Student's Signature

(2) Encircle the single most appropriate answer.
(3) Each question carries one mark and there is no negative marking.
(4) Overwriting is not allowed.

Q. 1 Multiple Choice Questions (MCQs) **[Marks 20]**

1. All of the following statements for COX-2 are correct EXCEPT :
   a. Induced at the site of inflammation
   b. Activation of COX-2 leads to ulcer, protective effect on gastric mucosa
   c. It is constitutionally expressed on some cell surfaces
   d. It is utilized in generation of eicosanoids with a ring structure
2. Which of the following drug is commonly used in narcoanalysis?
   a. Atropine sulfate
   b. Scopolamine hydrochloride
   c. Phenobarbitone
   d. Morphine

3. For which of the following drugs a warning is written: 'To be sold by retail on the prescription of registered medical practitioner only'.
   a. Schedule C
   b. Schedule X
   c. Schedule Y
   d. Schedule H
4. Antihistaminics used for motion sickness is :
   a. Cetirizine
   b. Meclizine
   c. Diphenhydramine
   d. Fexofenadine
5. The sympathetic and parasympathetic systems exert functionally opposite influences on the following parameters except:
   a. Heart rate
   b. Atrial refractory period
   c. Pupil diameter
   d. Intestinal motility
6. Gastric lavage is contraindicated in :
   a. Salicylate poisoning
   b. Organophosphate poisoning
   c. Kerosene poisoning
   d. Morphine poisoning
7. Regarding efficacy and potency of a drug all are true EXCEPT :
   a. In. a clinical setup, efficacy is more important than potency
   b. In the log dose response curve, the height of the curve corresponds with efficacy
   c. ED_{50} of the drug corresponds to the efficacy
   d. Drugs that produce similar pharmacological effect can have different levels of efficacy
8. Tachyphylaxis is seen after use of:
   a. Tamoxifen
   b. Ephedrine
   c. Morphine
   d. Chlorpromazine
9. Correctly matched pair of heavy metal and its respective chelating agent is :
   a. Iron - BAL
   b. Mercury - Calcium disodium edetate
   c. Copper - d-penicillamine
   d. Arsenic - Desferioxamine

10. Caution is advised for the use of Aspirin in which of the following group of patients :
    a. In diabetics - can cause hyperglycaemia
    b. In children with viral disease - risk of acute renal failure
    c. In gout - can increase serum uric acid levels
    d. In pregnancy- risk of teratogenicity
11. Timolol eye drops are preferred over pilocarpine eye drops by glaucoma patients because :
    a. Timolol is more effective than pilocarpine
    b. Timolol acts by enhancing uveo-scleral outflow
    c. Timolol produces less ocular side effects
    d. There are no contraindications to timolol
12. Use of morphine in preanaesthetic medication:
    a. Is routine except in the presence of contraindications
    b. Is restricted to patients being anaesthetised with ether
    c. Should be made only in combination with atropine
    d. Is restricted mostly to patients in pain preoperatively
13. A drug competes with ACh for receptors at the motor end plate affect skeletal muscle as it
    a. produces uncontrolled muscle spasms
    b. causes the muscles to contract and be unable to relax
    c. causes muscles to relax and be unable to contract
    d. makes the muscles more excitable
14. Transdermal drug delivery systems offer the following advantages EXCEPT :
    a. Produces high peak plasma concentration of the drug
    b. Produces smooth and non-fluctuating plasma concentration of the drug
    c. Minimises inter-individual variations in the achieved plasma drug concentration
    d. Avoids hepatic first-pass metabolism of the drug
15. Therapeutic index is an assessment of:
    a. Potency of drug
    b. Onset of action
    c. Duration of action
    d. Margin of safety
16. All of the following statements for flumazenil are true EXCEPT :
    a. It is a specific antagonist of benzodiazepines
    b It may be used to treat barbiturate poisoning
    c. It is given intravenously
    d. It acts on same site on GABA channels where benzodiazepines bind

17. When is Ketamine NOT preferred as an anaesthetic agent ?
    a. Glaucoma
    b. Emergency conditions with full stomach
    c. Short surgeries in asthmatic patients
    d. For dissociative anaesthesia

18. Drug of choice for alcohol withdrawal is :
    a. Chlordiazepoxide
    b. Disulfiram
    c. Naltrexone
    d. Diazepam

19. The most vulnerable period of pregnancy for the causation of foetal malformations due to drugs is:
    a. 18-55 days of gestation
    b. 56-84 days of gestation
    c. Second trimester
    d. 36 weeks onwards

20. In drug metabolism, hepatic cytochrome P-450 (CYP-450) system is responsible for :
    a. Phase I reactions
    b. Phase II reactions
    c. Both (a) and (b)
    d. Converting hydrophilic metabolites to lipophilic metabolites

SECTION I

Instructions:

(1) Answers should be precise and to the point.
(2) Give examples and figures if needed.
(3) First 20 mins have been allotted to solve multiple choice questions.

Q. 2 **Answer in brief [any five] :** **[3×5=15]**

a. First order versus zero order kinetics.
b. Explain microsomal enzyme inhibition with suitable examples.
c. Write differences between neostigmine and physostigmine.
d. Short note on "Placebo".
e. Write in brief therapeutic uses and adverse effects of selective COX-2 inhibitors.
f. Define drug antagonism. Mention its types with suitable examples.

Q. 3 **Write short notes [any three] :** **[5×3=15]**

a. Enumerate various drugs for glaucoma. Discuss the pharmacotherapy for angle closure glaucoma.

b. Classify β - blocker drugs. Discuss their therapeutic uses and adverse effect profile.

c. Describe the concept of potency and efficacy of drugs with suitable examples and graphs.

d. Mention various atropine substitutes and/or derivatives. Describe their clinical uses.

Q. 4 **Case based questions :** **[10×1=10]**

A 36-year-old female presented to the rheumatology department with chief complaints of pain, swelling and morning stiffness of small joints of both hands along with increased fatigue in the last 3-4 months. Her physical examination and laboratory investigations were suggestive of rheumatoid arthritis. She was prescribed tablet methotrexate 15 mg once a week for two months and tablet aceclofenac 100 mg once a day for one month for her condition.

Answer the following questions :

a. Explain the rationale behind prescribing the above-mentioned drugs for initial episode. What are the main adverse effects to be anticipated in this patient?
Mention the precautions to be taken while the patient is on these medications. [2+1+2]

b. Classify disease modifying anti-rheumatoid drugs. [2]

c. What is the pharmacological basis of prescribing corticosteroids during the course of the disease? [3]

SECTION II

Q. 5 **Answer in brief [any five] :** **[3×5=15]**

a. Explain in brief "Pharmacovigilance".

b. Typical versus atypical antipsychotic agents.

c. Short note of management of methanol poisoning.

d. Enlist agents used in spinal anaesthesia along with complications of spinal anaesthesia.

e. Name two mucolytic agents. Explain briefly role of mucolytic in the treatment of cough.

f. Write a note on pre-anaesthetic medications along with its uses.

Q. 6 **Write short notes [any three] :** **[5×3=15]**

a. Mention various neuromuscular blocking agents. Explain the difference between non-depolarizing and depolarizing block. Write any two therapeutic uses of succinylcholine.

b. Enumerate various anti-epileptic agents. Explain the pharmacological basis of phenytoin in grand mal epilepsy. Describe drug-drug interactions of phenytoin.

c. Phases of clinical trial.

d. Classify anti-asthmatic drugs. Discuss the treatment for acute attack of bronchial asthma.

Q. 7 **Case based questions :** **[10×1=10]**

A 50-year-old male patient presents to the medicine out-patient department with tremors at rest in one hand, difficulty in initiating movements, mask like face, defective posture and gait along with dementia. After a thorough clinical and central nervous system examination, he was diagnosed as a case of parkinson's disease. The clinician prescribed a combination of levodopa 100 mg and carbidopa 10 mg orally once daily for one month. The patient was asked to visit for follow-up after a month.

Answer the following questions :

a. Explain the rationale for prescribing a fixed dose combination of levodopa + carbidopa.
Discuss the consequences of initial as well as prolonged levodopa therapy. [2 + 2]

b. Classify the drugs prescribed for parkinsonism. [2]

c. What is drug induced parkinsonism? How will you treat such a case? [2]

d. Mention recent developments in the treatment of parkinsonism. [2]

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IInd M.B.B.S. Examination January - 2023

Pharmacology - Paper II

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

(1) નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ **IInd M.B.B.S.**

Name of the Subject :

☛ **Pharmacology - Paper II**

Subject Code No.: **2106000102020102**

Seat No.:

Student's Signature

(2) Encircle the single most appropriate answer.

(3) Each question carries one mark and there is no negative marking.

(4) Overwriting is not allowed.

Q.1 Multiple Choice Questions (MCQs) **[Marks 20]**

1. Select the drug combination which does NOT exhibit supra-additive synergism :
   a. Nalidixic acid + nitrofurantoin
   b. Amoxicillin + clavulanic acid
   c. Pyrimethamine + sulfadoxine
   d. Sulfamethoxazole + trimethoprim
2. Which of the following is NOT a valid indication for parenteral iron therapy ?
   a. Inadequate response to oral iron due to patient non-compliance
   b. Anemia during pregnancy
   c. Severe anemia associated with chronic bleeding
   d. Anemia in a patient of active rheumatoid arthritis
3. Which diuretic is preferred in cirrhotic ascites ?
   a. Furosemide b. Spironolactone
   c. Acetazolamide d. All of the above

4. A clinician diagnosed isoniazid induced neurological disturbances in a 30-year-old male patient on anti-tubercular drug regimen. Which vitamin should be prescribed ?

a. Vitamin Bl
b. Vitamin B6
c. Vitamin Bl2
d. Vitamin B2

5. The management of thyrotoxicosis crisis includes all the following except:

a. Propranolol
b. Hydrocortisone
c. Oral I^{131}
d. Propylthiouracil

6. Combine oral contraceptive pill reduces the risk of:

a. Breast cancer
b. Ovarian cancer
c. Cervical cancer
d. Vaginal cancer

7. Which drug should not be given in pregnancy ?

a. Labetalol
b. Hydralazine
c. ACE inhibitors
d. Methyldopa

8. Which of the following statements about octreotide is FALSE ?

a. It is used for the treatment of acromegaly
b. It stops oesophageal variceal bleeding
c. It can be used for the management of secretory diarrhoea
d. It is effective orally

9. The following antianginal drug is most likely to produce tachycardia as a side effect:

a. Amlodipine
b. Nifedipine
c. Diltiazem
d. Verapamil

10. When are protom pump inhibitors most effective ?

a. After meals
b. Along with H2 blockers
c. Shortly before meals
d. During prolonged fasting periods

11. Which of the following purgative increases the fecal bulk due to their water absorbing and retaining capacity ?

a. Methyl cellulose
b. Lactulose
c. Liquid paraffin
d. Dioctyl sodium sulfosuccinate

12. The drug of choice for neurocysticercosis is :

a. Albendazole
b. Niclosamide
c. Praziquantel
d. Ivermectin

13. The multidrug therapy of leprosy is superior to monotherapy on the following basis :
    a. It prevents emergence of dapsone resistance
    b. It is effective in cases with primary dapsone resistance
    c. It shortens the total duration of drug therapy and improves compliance
    d. All of the above
14. Dobutamine is preferred, over dopamine in cardiogenic shock because of its relatedness to :
    a. Better cardiac stimulation
    b. Less peripheral vasoconstriction
    c. Lower risk of cardiac arrhythmias
    d. More CNS stimulation
15. Which antifungal agent is effective in both dermatophytosis as well as systemic mycosis :
    a. Amphotericin B
    b. Griseofulvin
    c. Clotrimazole
    d. Ketoconazole
16. On which enzymes do statins act ?
    a. Acyl CoA synthetase
    b. Acyl CoA reductase
    c. HMG CoA synthetase
    d. HMG CoA reductase
17. 'Red man syndrome' has been associated with rapid intravenous injection of the following antibiotic:
    a. Vancomycin
    b. Clindamycin
    c. Cefoperazone
    d. Piperacillin
18. Astringents are substances that:
    a. Irritate sensory nerve endings
    b. Precipitate proteins
    c. Penetrate target cell nucleus for their action
    d. All of the above
19. The following anticancer drug has high emetogenic potential:
    a. Vincristine
    b. Chlorambucil
    c. 6-Mercaptopurine
    d. Cisplatin
20. Which vitamin acts as a hormone ?
    a. Vitamin A
    b. Vitamin D
    c. Vitamin C
    d. Vitamin E

SECTION - I

Instructions:

1. Answers should be precise and to the point.
2. Give examples and figures if needed.
3. First 20 mins have been allotted to solve multiple choice questions.

Q.2. **Answer in brief [any five] :** **[3×5 = 15]**

a. Discuss briefly about heparin versus warfarin.

b. Classify thyroid inhibitors. Write a note on thyroid storm management.

c. Management of erectile dysfunction.

d. Outline the pharmacotherapy of psoriasis.

e. Describe various types of oral contraceptives. What is the rationale of combining estrogen and progesterone for contraception?

f. Write a note on drug therapy for constipation.

Q.3. **Write short notes [any three] :** **[5×3 = 15]**

a. Mention various thrombolytic agents. Describe their uses, mechanism of action and precautions required while using them.

b. Discuss various insulin preparations available. Write in detail about newer insulin preparations, their uses, pros and cons of each.

c. Enumerate commonly used glucocorticoids. Discuss their adverse effect profile.

d. Classify diuretic agents. Explain mechanism of action, uses and adverse effect profile of thiazide-like diuretics in detail.

Q.4. **Case based questions :** **[10×1 = 10]**

An adult 40 years male, an executive in a multi-national company, has complaints of pain in abdomen since a month, along with occasional heart burn due to which he is unable to sleep. It worsens with ingestion of spicy and oily meals. After a thorough examination, physician diagnosed him as a case of peptic ulcer. Along with appropriate diet and lifestyle modifications, physician prescribed him anti-ulcer drugs.

Answer the following questions :

a. Enumerate various drugs from different groups which can be prescribed to him along with mechanism of action of any two drug classes. [4]

b. Which drugs should be prescribed to the above patient if he develops gastroesophageal reflux disease (GERD)? [2]

c. Write briefly about treatment regimens for H. pylori infection. [4]

SECTION - II

Q.5 **Answer in brief [any five] :** **[3×5 = 15]**

a. Elaborate mechanism of action, therapeutic uses and adverse effects of metronidazole.

b. Outline the pharmacotherapy of urinary tract infection.

c. What is post exposure prophylaxis for HIV infection? Write two NACO recommended regimens for same.

d. Describe measures to prevent antimicrobial drug resistance in detail.

e. Write a short note on anti-hypertensives in pregnancy.

f. Enumerate HMG-CoA reductase inhibitors along with their uses.

Q.6. **Write short notes [any three] :** **[5×3 = 15]**

a. Enlist anti-malarial drugs. Discuss the treatment regimens for chloroquine resistant P. falciparum malaria.

b. Classify fluoroquinolones. Describe the mechanism of action, therapeutic uses and adverse effects of any one fluoroquinolone.

c. Which are the drugs for congestive heart failure? Discuss the mechanism of action of digoxin in this scenario.

d. Describe in detail general principles for cancer chemotherapy.

Q.7. **Case based questions :** **[10×1 = 10]**

A 55-year-old male patient was admitted to casualty with chief complaint of heaviness in chest, squeezing midsternal pain which was radiating to jaw and left shoulder without any precipitating factor, lasting for about few minutes. He was sweating profusely. His electrocardiogram showed ST segment elevation. He was diagnosed as having acute myocardial infarction.

Answer the following questions :

a. Write in detail about the management of above-mentioned diagnosis. [5]

b. Classify anti-anginal drugs. [3]

c. What is the rationale of using β blocker + long-acting nitrate combination in classical angina? [2]

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Second Year M.B.B.S. Examination January - 2023

Pathology: Paper -1 (CBME New course)

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

(1) નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ **Second Year M.B.B.S.**

Name of the Subject :

☛ **Pathology: Paper -1 (CBME New course)**

Subject Code No.: **2106000102010101**

Seat No.:

Student's Signature

(2) Each question carries one mark.

(3) Encircle ◯ the correct answer

SECTION- I

Q-1 Multiple choice questions (*no negative markings) **20**

1. A 60-year male presented with pain in chest, radiating to left arm. Treating cardiologist found occlusion of coronary vessels during angiography. Which type of necrosis is seen in heart this condition?
   a) Fat necrosis
   b) Caseous necrosis
   c) Coagulative necrosis
   d) Colliquative necrosis
2. Bradykinin causes:
   a) Vasoconstriction
   b) Pain at the site of inflammation
   c) Bronchodilatation
   d) Decreased vascular permeability
3. Brown atrophy is due to:
   a) Fatty necrosis
   b) Hemosiderin
   c) Lipofuscin
   d) Ceruloplasmin
4. HLA is present on:
   a) All nucleated cells
   b) Only on cells of immune system
   c) Only on B cell
   d) Only on T cell

5. If both parents are carrier of sickle cell anaemia, then the likelihood of offspring having disease is:
   a) 10%
   b) 50%
   c) 25%
   d) 100%

6. All the following about tumor markers are properly matched except:
   a) Prostate cancer-PSA
   b) Colon cancer-CEA
   c) Ovarian cancer-CA-125
   d) Cholangiocarcinoma -AFP

7. Best marker for SLE is
   a) Anti Sm antibody
   b) Anti- dsDNA antibody
   c) Anti- histone antibody
   d) Anti-chromatin antibody

8. A 48 Year female presented with bone pain had Hepatosplenomegaly. Biopsy of Spleen showed Crumpled paper appearance. Which product is likely to have accumulated:
   a) Glucocerebroside
   b) Sphingomyelin
   c) Sulfatide
   d) Ganglioside

9. Which is not a tumour suppressor gene:
   a) WT-1
   b) P53
   c) Rb
   d) Ras

10 lack of differentiation is called:
   a) Anaplasia
   b) Dysplasia
   c) Metaplasia
   d) Hyperplasia

11. Which one is not the precancerous condition?
   a) Crohn's disease
   b) Ulcerative colitis
   c) Leukoplakia
   d) Xeroderma pigmentosum

12. Oedema occurs when protein level is below :
   a) 8mg/dl
   b) 2 mg/dl
   c) 5 mg/dl
   d) 10 mg/dl

13. Urine pH normally ranges from:
   a) 4.0 to 9.0
   b) 4.5 to 7.0
   c) 4.5 to 8.0
   d) 5.0 to 6.0

14. Chicken fat clot is:
   a) Post-mortem clot
   b) Thrombus
   c) Infarct
   d) All the above

15. The characteristic features of apoptosis on light microscopy is:
   a) Cellular swelling
   b) Nuclear Condensation
   c) Intact cell membrane
   d) Cytoplasmic eosinophilia

16. Which of the following regarding Bombay blood group is false :.
   a) Lack of H, A and B antigen on RBC
   b) Lack of H, A and B substance in saliva
   c) Lack of antigen of several blood group system
   d) H, A and B antibodies will always be present in serum.

17. Pale infarct is seen in all except:
    a) Lung
    b) Kidney
    c) Spleen
    d) Heart

18. Lardaceous spleen is due to deposition of amyloid in:
    a) Sinusoids of red pulp
    b) White pulp
    c) Pencillary artery
    d) Splenic trabeculae

19. Most common viral antigen used for diagnosis of HIV in blood before transfusion is:
    a) p24
    b) p7
    c) pl7
    d) pl4

20. Lipid in tissue detected by:
    a) PAS
    b) Oil red O
    c) Myeloperoxidase
    d) Mucicarmine

SECTION- II (40 Marks)

Q-2 **Case based long essay questions** **13**

A 65-year-old lady with a known case of Diabetes mellitus brought to the clinic in an unconscious state. She had high grade fever and haematuria for the past 2 days. On examination her blood pressure was 70 /30 mm Hg and the temperature was 100.5* F with tachypnoea. Laboratory study revealed WBC count of 30,000 /μL with 90% neutrophil and shift to left. Platelet count was 50,000/μL. Urine analysis revealed many gram-negative organisms.

1. What is the most likely diagnosis? 2 Marks
2. Enumerate various types of the given condition 2 Marks
3. Describe the pathophysiology of the given condition 4 Marks
4. Describe morphological features of the given condition 5 Marks

Q-3 **Long essay questions. (Attempt any three)** **27**

1) Describe etiology of Cell injury. Describe morphology of Cell injury.
2) Define Hypersensitivity reactions. Describe etiology, pathogenesis, and examples of Type-1 Hypersensitivity reactions.
3) Define and classify Amyloidosis. Describe pathogenesis and methods of demonstration of Amyloid.
4) Define Inflammation and write cardinal signs of Inflammation. Describe vascular and cellular events of Acute Inflammation.

SECTION- III (40 Marks)

Q-4 **Short notes (Attempt Any 8)** **40**

1) Enumerate Blood components and mention their uses and storage
2) Exfoliative cytology.
3) Describe CSF picture in Tuberculous meningitis.
4) Down's syndrome.
5) Viral oncogenesis.
6) Pathological calcification.
7) Describe factors affecting Wound healing.
8) Granulomatous inflammation.
9) Etiopathology and sequel of Obesity.
10) Compare gross and microscopic features of Benign and Malignant tumours.

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Second Year M.B.B.S. Examination January - 2023

Pathology: Paper -II (Set - I)

(CBME New course)

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

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Name of the Examination:

☛ **Second Year M.B.B.S.**

Name of the Subject :

☛ **Pathology: Paper -II (Set - I) (CBME New course)**

Subject Code No.: **2106000102010102**

Seat No.:

Student's Signature

(2) Each question carries one mark

(3) Encircle ⬭ the correct answer

Time: 20 Min.] **[Total Marks: 20**

SECTION- I

Q-1 Multiple choice questions (*no negative markings) **(20)**

1. Barrett's oesophagus shows:
   a) Intestinal dysplasia
   b) Intestinal metaplasia
   c) Columnar cell metaplasia
   d) Columnar cell dysplasia
2. Councilman bodies are seen in:
   a) Wilson's disease
   b) Alcoholic hepatitis
   c) Acute viral hepatitis
   d) Autoimmune hepatitis
3. Which of the following testicular tumor is not a germ cell neoplasm:
   a) Seminoma
   b) Yolk sac tumor
   c) Sertoli cell tumor
   d) Teratoma
4. Red cell distribution width (RDW) used for estimation of:
   a) Poikilocytosis
   b) Anisocytosis
   c) Hypochromia
   d) Macrocytosis

5. A patient presented with osteomyelitis with sickle cell anemia. What will be the most common causative organism?
   a) Salmonella
   b) Staphylococcus aureus
   c) H. influenza
   d) Enterobacteria

6. All are decreased in iron deficiency anemia except:
   a) Serum ferritin
   b) TIBC
   c) Transferrin saturation
   d) Hepcidin

7. An epiphyseal bone lesion is:
   a) Osteogenic sarcoma
   b) Chondroblastoma
   c) Osteoma
   d) Chondromyxoid fibroma

8. Mucinous cystadenoma of ovary arises:
   a) From cystic teratoma
   b) From surface coelomic epithelium
   c) From sex cord stromal cells
   d) From ectopic mucin secreting glands

9. Most common carcinoma of breast is:
   a) Intraductal carcinoma
   b) Colloid Carcinoma
   c) Lobular Carcinoma
   d) Sarcoma phyllodes

10. A 65-year-old male presented with fatigue. His fasting sugar was 110 mg %, post prandial sugar was 180 mg %, HBA1C was 6.1 %. Diagnosis will be
   a) Prediabetes
   b) Stress induced
   c) Impaired glucose tolerance
   d) Diabetes mellitus

11. Transverse ulcers are seen in:
   a) Typhoid
   b) Tuberculosis
   c) Amebiasis
   d) Ulcerative colitis

12. Flea bitten appearance of kidney is seen in:
   a) Malignant hypertension
   b) Benign hypertension
   c) Chronic pyelonephritis
   d) Diabetes mellitus

13. Which of the following is associated with destruction of valves?
   a) Acute infective endocarditis
   b) Libman sacks endocarditis
   c) Rheumatic heart disease
   d) All the above

14. All are obstructive lung disease except:
   a) Emphysema
   b) Interstitial fibrosis
   c) Asthma
   d) Bronchiectasis

15. Verocay bodies are seen in:
   a) Meningioma
   b) Glioma
   c) Medulloblastoma
   d) Schwannoma

16. Most common site of artery of atherosclerosis:
   a) Left anterior descending artery
   b) Right coronary artery
   c) Left circumflex artery
   d) Diagonal branch of left anterior descending artery

17. Pleural mesothelioma is associated with:
    a) Asbestosis
    b) Berylliosis
    c) Silicosis
    d) Bagassosis

18. Subepithelial humps are characteristic of
    a) Minimal change disease
    b) Membranous glomerulonephritis
    c) Membranoproliferative glomerulonephritis
    d) Post streptococcal glomerulonephritis

19. A 70-year-old male has abdominal pain with a mass in abdomen. Angiography reveals an aneurysm of the aorta. Most likely cause is:
    a) Syphilis
    b) Trauma
    c) Atherosclerosis
    d) Congenital

20. Smudge cells in the peripheral smear are characteristic of:
    a) Chronic myeloid leukemia
    b) Chronic lymphocytic leukemia
    c) Acute myelogenous leukemia
    d) Acute lymphoblastic leukemia

Time: 2 Hours 40 Minutes] **[Total Marks: 80**

SECTION- II (40 Marks)

Q-2 **Case based long essay questions** **[13×1=13]**

A 40-year-old male patient presented with history of chronic alcoholism, distended abdomen, and hematemesis. Liver function test showed reversed A/G ratio.

1. What is possible diagnosis? 2 marks
2. Write pathogenesis of the disease 4 marks
3. Write gross and microscopic morphologic changes in the affected organ. 4 marks
4. Enumerate other clinical sequelae. 2 marks
5. List four etiological conditions other than alcohol causing this pathology 1 marks

Q-3 **Long essay questions. (Attempt any three)** **[9×3=27]**

1. Define Atherosclerosis. Describe etiology, pathogenesis, and morphological features of Atherosclerosis. 1+2+3+3
2. Define Nephrotic syndrome. Write its causes and describe pathogenesis of glomerular injury. 1+3+5
3. Define emphysema. Describe etio-pathogenesis and morphology of various types of emphysema 1+3+5
4. Define and classify Anemia. Write laboratory diagnosis of megaloblastic anaemia 1+ 3+5

Section III

Q-4 **Short notes (Attempt Any 8)** **[8×5=40]**

1. Describe morphological changes in Diabetic nephropathy.
2. Write morphological difference between Crohn's disease and Ulcerative colitis.
3. Describe gross and microscopic features of Colloid Goitre.
4. Miliary tuberculosis.
5. Giant cell tumor of the bone.
6. Squamous cell carcinoma.
7. Serum cardiac marker.
8. Hodgkin's lymphoma.
9. Enumerate Plasma cell disorder. Write laboratory diagnosis of Multiple myeloma.
10. Classify Germ cell tumour. Describe morphological features of Seminoma

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RAN-2106000102030101

RAN-2106000102030101

2nd Year M.B.B.S. Examination January - 2023

Microbiology : Paper - I

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

(1) નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:
☛ 2nd Year M.B.B.S.

Name of the Subject :
☛ Microbiology : Paper - I

Subject Code No.: 2106000102030101

Seat No.:

Student's Signature

(2) Draw a label diagram wherever required with blue pen/pencil only.
(3) Short notes 100-150 words
(4) Write heading of each question properly.

SECTION - IA

(General Microbiology and Immunology)

Que. 1 Define Hypersensitivity reactions, Classification of Hypersensitivity reaction, write in detail about mechanism of type 1 hypersensitivity reactions, write methods for detection of Type 1 hyper sensitivity reactions. **(12 marks)**

Que. 2 **Write notes. (any four)** **(4 × 7 = 28 marks)**

a. Principle, applications and modifications of Polymerase Chain Reaction in patient care.

b. Classification, types and diagnostic modalities of Immunodeficiency diseases.

c. Define vaccine. Describe National Immunization Schedule and the types of vaccines used in it.

d. Moist heat sterilization: methods, principle, application and control.

e. Mechanisms of transferable drug resistance in bacteria.

Que. 3 Multiple Choice Questions. **(10 Marks)**

1. Which of the following is absent in Gram negative bacteria?
   a. Peptidoglycan b. LPS
   c. Teichoic acid d. Porin Channels

2. Resolution power of microscope can be improved by using?
   a. Oil b. Stain
   c. Lenses d. Condenser

3. Bacteria are uniformly stained in which of the following phase of growth curve?
   a. Lag phase b. Log phase
   c. Stationary phase d. Declining phase

4. All of the following are basic steps of PCR cycle **EXCEPT:**
   a. Denaturation b. Amplification
   c. Extension d. Gel documentation

5. The antibodies detectable in mothers milk are
   a. IgG b. IgA
   c. IgG & IgA d. IgG, IgA & lgM

6. If the infection occurs at a much higher rate than usual in a particular geographic area, it is known as:
   a. Epidemic b. Endemic
   c. Hyper endemic d. Sporadic

7. Active acquired immunity has following features **EXCEPT**
   a. It involves active functioning of host's immune system
   b. It is long lasting
   c. There is no latent period
   d. It is associated with immunological memory

8. A child with a history of repetitive intestinal worm infestation is likely to show an increase in the level of:
   a. IgG b. IgM
   c. IgE d. IgD

9. Type of hypersensitivity reaction in myasthenia gravis is:
   a. Type I b. Type II
   c. Type III d. Type IV

10. Application of skin graft for the second time from the same donor will result in:

a. First set rejection
b. Second set rejection
c. Both
d. None

SECTION - I B

(Infection of Blood stream, Cardiovascular system, Gastrointestinal tract, Hepatobiliary system)

Que. 1 A young adult female was admitted to the hospital with intense headache, abdominal discomfort for past 5 days. She had also developed fever which is of remittent type with gradual rise in a step ladder fashion. On examination, she was toxic with temperature of 101°F, tongue was coated and mild splenomegaly was present. **(12 marks)**

a. What is the most probable etiological diagnosis?

b. Describe the pathogenesis of this condition.

c. Explain the choice of test, sample collection and laboratory diagnosis. of the condition.

d. Suggest preventive measures for the disease.

Que. 2 **Write notes. (any four)** **(4 × 7 = 28 marks)**

a. Hepatitis B virus: pathogenesis, laboratory diagnosis and prevention

b. Mycotic food poisoning.

d. Pyrexia of unknown origin: definition, causes and diagnostic test used

e. Two common hemo parasitic infections with pathogenesis and laboratory diagnosis of any one of them.

f. Importance of effective communication skill in Doctor Patient relationship.

Que. 3 **Multiple Choice Questions** **(10 Marks)**

1. Most common agent causing native valve endocarditis is:

a. S.aureus
b. S.epidermidis
c. Viridans streptococci
d. Enterococci

2. Which of the following infections causes Megaloblastic anemia:

a. Babesia microti
b. Diphyllobothrium latum
c. Bartonella bacilliformis
d. Leishmania donovani

3. Antibodies against which of the following antigen appear in typhoid carrier:
   a. Vi antigen
   b. O antigen
   c. H antigen
   d. Capsular antigen

4. Which of the following is the infective form of the malaria parasite to man:
   a. Merozoite
   b. Sporozoite
   c. Trophozoite
   d. Gametocyte

5. Which of the following is responsible for transmission of HBV infection:
   a. HBsAg
   b. HBeAg
   c. HBcAg
   d. HBV DNA

6. Single most important agent of traveler's diarrhea is:
   a. Enterotoxigenic E. coli
   b. Enteroaggregative E. Coli
   c. Campylobacter jejuni
   d. Non Typhodal salmonella

7. Most common viral cause of gastroenteritis is:
   a. Rotavirus
   b. Norwalk virus
   c. Adenovirus
   d. Hepadnavirus

8. A 35 year old male patient presented with complains for chronic indigestion and having diarrhoea alternating with constipation. He is a traveller and frequently consumes beef. The most appropriate investigation of choice to be advised in this case would be:
   a. Stool for toxin detection
   b. Stool for occult blood
   c. Stool for routine and microscopic examination
   d. Stool concentration technique

9. Which of the following route has highest risk of transmission of HIV:
   a. Sexual
   b. Blood product
   c. Needle/syringe
   d. Mother to fetus

10. Definitive host for Echinococcosis is:
   a. Man
   b. Dog
   c. Sheep
   d. Pig

RAN 2106000102030102

RAN-2106000102030102

2nd M.B.B.S. Examination January - 2023

Microbiology : Paper - II

Time: 3 Hours] **[Total Marks: 100**

સૂચના : / Instructions

(1) નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ 2nd M.B.B.S.

Name of the Subject :

☛ Microbiology : Paper - II

Subject Code No.: 2106000102030102

Seat No.:

Student's Signature

(2) Draw a label diagram wherever required with blue pen/pencil only.
(3) Short notes 100-150 words.
(4) Write heading of each question properly.

Section - II A

(Skin and soft tissue infection, Musculoskeletal and respiratory system)

Que. 1 A 35 year old female from a village of Bihar came to the hospital with history of fever on and off for the past one year and recently developed unilateral swelling of the left lower limb. Her blood sample was sent for peripheral blood smear examination which revealed worm like structures, 240 um in length with pointed tail tip. **(12 marks)**

a. Name the disease and its etiological agent.

b. Describe the life cycle, pathogenesis and laboratory diagnosis of this condition.

c. Explain prevention and treatment of this clinical condition.

Que. 2 **Write notes (any four)** **(4 × 7 = 28 Marks)**

a. Etio-pathogenesis, laboratory diagnosis and complication in a man with necrotic limb wound that crepitates following a road traffic accident.

b. Fever with rash in a child: four causative organisms and lpathogenesis, aboratory diagnosis and prevention of any one

c. Hospital acquired Infections: types, risk factors and preventive measures.

d. Pathogenesis and Laboratory Diagnosis of Madura foot.

e. COVID 19: Laboratory Diagnosis and Vaccines.

Que. 3 **Multiple Choice Questions.** **(10 Marks)**

1. Which of the following statement is correct about lepromatous leprosy:
   a. Multibacillary
   b. CMI is normal
   c. Langerhans cells are found
   d. Positive lepromin test

2. Survival of M. tuberculosis inside the macrophages is due to:
   a. Inhibition of entry into the host cell
   b. Inhibition of phagosome-lysosome fusion
   c. Inhibition of entry into the phagosome
   d. Inhibits degradation by lysosomal enzymes

3. Ecthyma gangrenosum is caused by:
   a. Pseudomonas
   b. Brucella
   c. Bordetella
   d. H. influenzae

4. Which of the following protein is used for Serotyping of Streptococcus pyogenes :
   a. M protein
   b. T protein
   c. R protein
   d. Carbohydrate antigen

5. CAMP test is useful in identification of:
   a. S. pyogenes
   b. S. agalactiae
   c. Viridans streptococci
   d. S. pneumoniae

6. Gram-stain morphology of Bacillus anthraces is:
   a. Tennis racket appearance
   b. Bamboo stick appearance
   c. Drum stick appearance
   d. Spectacle glass appearance

7. Which viral infection is responsible for Subacute Sclerosing Pan Encephalitis (SSPE):
   a. Mumps
   b. Measles
   c. Rubella
   d. Influenza

8. Which of the following is vector for leishmaniasis:
   a. Sandfly
   b. Reduvid bug
   c. Tsetse fly
   d. Anopheles mosquito

9. Which of the following fungus **DOES NOT** infect nail:
   a. Trichophyton
   b. Microsporum
   c. Epidermophyton
   d. Candida albicans

10. Rhinosporidiosis is characterized by all of the following **EXCEPT-**
   a. It is caused by a fungus.
   b. The fungus is usually found in dirty waters.
   c. It manifests as polyps that bleed easily.
   d. It can be cultured easily in laboratory.

Section - II B
(CNS, Genitourinary, HAI, Miscellaneous)

Que. 1 A 25 yr. old man presented with painless ulcer with hard base on penis. He had a history of sex with multiple partners. On examination, inguinal lymph nodes were enlarged, discrete, non-tender and rubbery. The blood specimen was collected and sent to the laboratory for serological test.

(12 marks)

a. What is the clinical diagnosis and possible causative agent? Justify.

b. Explain the pathogenesis and laboratory diagnosis of this condition.

c. Enlist three possible etiological agents in case the man had multiple painful genital ulcers.

Que. 2 **Write notes. (any four)** **(4 × 7 = 28 marks)**

a. Laboratory Diagnosis, treatment and prevention of tetanus.

b. Encephalitis: four causative agents and pathogenesis with laboratory diagnosis of anyone.

c. Antimicrobial stewardship program: concept and different strategies used in the program.

d. Non-tuberculosis Mycobacterium: classification and significance as human pathogen.

e. Consent: Definition, types and its importance in autonomy.

Que. 3 **Multiple Choice Questions.** **(10 Marks)**

1. Which of the following is the causative agent of chancroid?
   a. Haemophilusducreyi
   b. Klebsiellagranulomatis
   c. Mycoplasma hominis
   d. Candida albicans

2. Which of the following is **NOT** vaccine-derived poliovirus (VDPVs):
   a. mVDPV
   b. cVDPV
   c. iVDPV
   d. VDPV

3. Which of the following fungi are associated with zygomycosis?
   a. Mucor
   b. Rhizopus
   c. Absidia
   d. All of the above

4. Which of the following pigment is diagnostic of Pseudomonas aeruginosa?
   a. Pyocyanin
   b. Pyorubin
   c. Pyomelanin
   d. Fluorescin

5. Which culture medium is preferred for processing of urine specimens?
   a. TCBS agar
   b. CLED agar
   c. Chocolate agar
   d. XLD agar

6. Which of the following depicts the decreasing order of risk of transmission following occupational exposure?
   a. HIV>HBV>HCV
   b. HBV>HCV>HIV
   c. HBV>HIV>HCV
   d. HCV>HBV>H1V

7. Which of the following **IS NOT USED** as indicator organism of fecal contamination of water:
   a. Fecal E. coli
   b. Fecal streptococci
   c. Pseudomonas
   d. Vibrio cholerae

8. The most effective way of preventing tetanus is:
   a. Hyperbaric oxygen
   b. Tetanus toxoid
   c. Antibiotics
   d. surgical debridement and toilet

9. Neonatal meningitis acquired through contaminated/ colonized/infected birth canal is due to:
   a. S. pyogenes
   b. Viridans streptococci
   c. S. agalactiae
   d. S. pneumoniae

10. Serotyping and serosubtyping of meningococci are based on:
    a. Outer membrane proteins
    b. Endotoxin
    c. Capsular polysaccharide
    d. Transferrin binding proteins
