

2106000102030101

2106000102030101
Examination February – March 2024
SECOND MBBS
MICROBIOLOGY (PAPER - I) - LEVEL 3

[Time: Three Hours]

[Max. Marks: 100]

Instructions:

1. Fill up strictly the following details on your answer book
 - a. Name of the Examination : **SECOND MBBS**
 - b. Name of the Subject : **MICROBIOLOGY (PAPER - I) - LEVEL 3**
 - c. Subject Code No : **2106000102030101**
2. Sketch neat and labelled diagram wherever necessary with blue pen/pencil only.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Write heading of each question properly.
6. Write legibly.

Seat No:

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Student's Signature

SECTION – I

(General Microbiology, Immunology, Infections of Blood stream & cardiovascular system, Gastro intestinal tract & Hepatobiliary system)

Q.1 Multiple choice questions (MCQs).

1*20=20

1. Most common protozoan parasite responsible for Steatorrhea is:
 - A. Giardia lamblia
 - B. Entamoeba histolytica
 - C. Entamoeba coli
 - D. Enteromonas hominis
2. Test done to differentiate between Pathogenic and nonpathogenic strains of Staphylococcus aureus is
 - A. Oxidase test
 - B. Catalase test
 - C. Coagulase test
 - D. Glucose fermentation test
3. Dengue virus infection is transmitted by
 - A. Culex mosquito
 - B. Anopheles mosquito
 - C. Aedes aegypti
 - D. Tick

4. Infection with *Plasmodium falciparum* is suspected if the infected RBC is
- A. Normal in size
 - B. showing multiple infections
 - C. Both (A) and (B)
 - D. shows motile form inside the RBCs
5. Which of these techniques is not used for cultivation of viruses
- A. Inanimate culture media
 - B. Tissue culture
 - C. Animal inoculation
 - D. Embryonated egg
6. Rocky mountain spotted fever is due to
- A. *R. rickettsii*
 - B. *R. typhi*
 - C. *R. prowazekii*
 - D. *R. conorii*
7. IgE
- A. Protects body fluids
 - B. Protects body surfaces
 - C. Protects blood stream
 - D. Mediates reaginic hypersensitivity
8. Negri bodies of Rabies are
- A. Intracytoplasmic eosinophilic inclusions with basophilic inner granules
 - B. Intracytoplasmic basophilic inclusions with basophilic inner granules
 - C. Intracytoplasmic acidophilic inclusions with basophilic inner granules
 - D. None of the above
9. Transduction is a method of gene transfer from one bacteria to another by
- A. Passage of genetic material through sex pilli
 - B. Direct cell to cell contact and protoplasmic fusion
 - C. Plasmids transfer
 - D. Cross infecting Bacteriophages

10. In Gram's staining " Gull wing" shape is seen in
A. *Yersinia pestis* B. *Vibrio cholerae*
C. *Acinetobacter* D. *Campylobacter*
11. CBNAAT is
A. Chip based nucleic acid amplification test
B. Cartridge based nucleic acid amplification test
C. Both (a) and (b)
D. None of the above
12. Production of germ tube within 2 hours serves as identification character for
A. *Ray fungus* B. *Cryptococcus neoformans*
C. *Rhizopus* D. *Candida albicans*
13. Which of the following parasites cause megaloblastic anemia
A. *Diphyllobothrium latum* B. *Taenia solium*
C. *Ancylostoma duodenale* D. *Echinococcus granulosus*
14. RA factor in Rheumatoid arthritis is a/an
A. Antigen B. Auto-antibody
C. Hapten D. Antibody
15. Graft between two individuals sharing same genetic constitution is referred to as
A. Allograft B. Isograft
C. Xenograft D. Autograft
16. Which of these enzyme is not found inside the core of the virus
A. DNA Polymerase B. Reverse transcriptase
C. Neuraminidase D. RNA Polymerase
17. Amastigote forms of *Leishmania donovani* are found in
A. The cells of Reticuloendothelial system
B. Red blood cells
C. Culture media
D. Digestive tract of insect vector
18. RAST detects _____ hypersensitivity reaction
A. Type I B. Type II
C. Type III D. Type IV

19. In PCR, denaturation occurs at
A. 55°C
B. 72°C
C. 95°C
D. None of the above
20. Which of these is not a live attenuated vaccine
A. TAB
B. MMR
C. Sabin's vaccine
D. BCG

SECTION – II

(General Microbiology, Immunology)

Q.2 Essay type question / clinical scenario based.

12

Enlist & Describe in Detail about methods of gene transfer and discuss the mechanisms of drug resistance in bacteria

Q.3 Short Note (any 4 out of 5)

7*4=28

1. Mechanism of Bacterial Pathogenesis
2. Describe in detail the structure & Function of the Bacterial Cell wall & write methods of Demonstration of cell wall.
3. Write in detail about Immune complex mediated hypersensitivity reaction.
4. Classify immunity. Describe the various mechanism of innate/acquired immunity.
5. Draw the two common complement activation pathways and describe the importance of complement in health and disease.

SECTION – III

(Infections of Blood stream & Cardiovascular system, Gastro intestinal tract & Hepatobiliary system)

Q.4 Essay type question / clinical scenario based.

12

Enumerate Hepatitis Viruses and their mode of transmission. Describe viral markers, Treatment & Prophylaxis of Hepatitis B Infection.

Q.5 Short Note (any 4 out of 5)

7×4=28

1. A 35 year old male was admitted in casualty with complain of severe colicky abdominal pain. Patient gave H/O of stool passage of blood and mucus with foul smell for last few days. Wet mount stool preparation showed motile protozoa with pseudopodia. On examination tenderness in right hypochondrium and mild hepatomegaly is found.
 - a. What is the most probable cause for this condition? 1
 - b. Write pathogenesis of this condition. 3
 - c. Write the details of diagnostic modalities of above condition. 3

2. A 25 year old man from urban area admitted in hospital presented with high fever, headache, and retro orbital pain, sever back pain for 5 days and bleeding nose today morning. On examination rash are seen on the body. Blood reports shows platelet count is 20,000/mm³.
 - a. What is the most probable cause for this condition? 1
 - b. Write pathogenesis of this condition. 3
 - c. Write the details of laboratory diagnosis of above condition. 3

3. Enumerate the nematodes infesting intestine. Describe the life cycle, laboratory diagnosis of any one of them.

4. Classify Rickettsia. Describe the etiology, pathogenesis, laboratory diagnosis of spotted fevers.

5. Rheumatic Fever

2106000102030102

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Examination February – March 2024
SECOND MBBS
MICROBIOLOGY (PAPER - II) - LEVEL 3

[Time: Three Hours]

[Max. Marks: 100]

Instructions:

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 - b. Name of the Subject : **MICROBIOLOGY (PAPER - II) - LEVEL 3**
 - c. Subject Code No : **2106000102030102**
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Seat No:

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Student's Signature

SECTION – I

(Infections of skin soft tissues & musculoskeletal systems,
Respiratory system, Infections of central nervous system,
genitourinary system, Hospital acquired Infections, Miscellaneous)

Q.1 Multiple choice questions (MCQs).

1*20=20

- 1) PRAS is
 - A. Pro-Reduced Anaerobic system
 - B. Pro-Reduced Aerobic system
 - C. Pre-Reduced Anaerobic system
 - D. Pre-Reduced Aerobic system
- 2) The fungus that exhibits septate hyphae with dichotomous branching on KOH mount is
 - A. Cryptococcus
 - B. Penicillium
 - C. Mucor
 - D. Aspergillus

- 3) Differentiating feature of *Neisseria gonococcus* from *Neisseria meningitidis* is?
 - A. Oxidase Positive
 - B. It ferments glucose
 - C. It ferment Maltose
 - D. It reduce Nitrates
- 4) *Proteus* antigen cross react with?
 - A. *Klebsiella*
 - B. *Rickettsiae*
 - C. *Chlamydiae*
 - D. *E.coli*
- 5) The common cause of Pneumonia in immunocompromised patients is
 - A. *C. tropicalis*
 - B. *P. jiroveci*
 - C. *C. A. niger*
 - D. *P. marneffi*
- 6) The following are moments of hand hygiene
 - A. After touching a patient
 - B. Before any aseptic procedure
 - C. After touching patients surroundings
 - D. All of the above
- 7) Total number of Categories in BioMedical Waste are
 - A. 10
 - B. 6
 - C. 4
 - D. 2
- 8) MGIT used in tuberculosis diagnosis is actually
 - A. Automated culture
 - B. Biochemical test
 - C. Microscopic method
 - D. None of the above
- 9) Buruli ulcer is caused by
 - A. *M. xenopi*
 - B. *M. scrofulaceum*
 - C. *M. malmoense*
 - D. *M. ulcerans*
- 10) The amplifier host for Japanese B Encephalitis is
 - A. Ardeid birds
 - B. Pigs
 - C. Egrets
 - D. Herons
- 11) Epstein-Barr virus is associated with the following malignancies except
 - A. Nasopharyngeal carcinoma
 - B. Burkitt's lymphoma
 - C. Carcinoma of cervix
 - D. Non-Hodgkin lymphoma

- 12) Which of the following is correct statement regarding the shape of the virus
- A. Rota virus- wheel shape
 - B. Tobacco mosaic virus- Filamentous shape
 - C. Ebola virus- Rod shape
 - D. Adeno virus- Brick shape
- 13) Guinea worm disease is caused by
- A. *Schistosoma haematobium*
 - B. *Ancylostoma duodenale*
 - C. *Trichinella spiralis*
 - D. *Dracunculus medinensis*
- 14) In Influenza, antigenic drift is due to
- A. Point mutation
 - B. Deletion mutation
 - C. Genetic reassortment
 - D. All of the above
- 15) The following intestinal parasite migrate to lung in their life cycle except
- A. *Trichinella spiralis*
 - B. *Ascaris lumbricoides*
 - C. *Ancylostoma duodenale*
 - D. *Strongyloides stercoralis*
- 16) The following fungus infect Central Nervous system except
- A. *Mucor*
 - B. *Aspergillus*
 - C. *Cryptococcus neoformans*
 - D. *Acremonium* species
- 17) Wool Sorter's disease is caused by
- A. *Bacillus anthracis*
 - B. *Staphylococcus aureus*
 - C. *Yersinia pestis*
 - D. *Rhodococcus equi*
- 18) All of the following parasites can cause encephalitis **except**
- A. *Acanthamoeba*
 - B. *Ascaris lumbricoides*
 - C. *Toxoplasma gondii*
 - D. *Naegleria*
- 19) Koch-Weeks bacillus is
- A. *Haemophilus aegyptius*
 - B. *Haemophilus ducreyi*
 - C. *Haemophilus parainfluenzae*
 - D. *Haemophilus hemolyticus*

- 20) Ecthyma gangrenosum is caused by
- A. Moraxella lacunata
 - B. Stenotrophomonas maltophilia
 - C. Pseudomonas aeruginosa
 - D. Burkholderia pseudomalle

SECTION – II

(Infections of skin soft tissues, musculoskeletal systems & Respiratory system)

Q.2 Essay type question / clinical scenario based.

12

A 5 year old boy presented to the pediatric OPD with H/O pain in throat and difficulty in swallowing. He had low grade fever for the past 2 days. On examination he was found to have cervical lymphadenopathy and tonsillar pillars were covered by gray-white discharge. (On examination a grey brown color thick fibrinous membrane on the pharynx). His vaccination card showed that the child's immunization was not complete.

1. What is the clinical condition?(1 mark)
2. Name the most probable etiological agent responsible for this condition. (1 mark)
3. Write in detail the pathogenesis of the condition. (4 marks)
4. Write in details of laboratory diagnosis & treatment of above condition. (4+2 marks)

Q.3 Short Note (any 4 out of 5)

7*4=28

1. Discuss skin and soft tissue infections caused by Staphylococcus aureus. Write its lab diagnosis
2. Cutaneous leishmaniasis
3. Mycetoma
4. Mumps
5. Discuss the vaccine against Poliomyelitis.

SECTION – III

(Infections of central nervous system, genitourinary system,
Hospital acquired Infections, Miscellaneous)

Q.4 Essay type question / clinical scenario based.

12

Define HAI. Enlist major types of HAI. Explain Standard precaution & write Detail about Hand Hygiene. Write in detail about bundle care approach for prevention of device associated Infection

Q.5 Short Note (any 4 out of 5)

7*4=28

1. A 25-year-old Australian visited his local doctor complaining of difficulty in swallowing liquids, loss of appetite and restlessness. He had a travel history to India one month back and did mention being bitten by a street dog.
 - a. What is the most probable etiological diagnosis?
 - b. Discuss the laboratory diagnosis and the vaccines available for human use.
2. Define and describe the properties of an Idea Disinfectant. Enumerate the various Disinfecting agents and their applications.
3. Classify anaerobes. Describe the aetiology, pathogenesis, lab diagnosis and prophylaxis of tetanus.
4. Non gonococcal urethritis
5. Congenital toxoplasmosis.

2106000102010101
Examination February – March 2024
SECOND MBBS
PATHOLOGY (PAPER - I) - LEVEL 1

[Time: Three Hours]

[Max. Marks: 100]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination: **SECOND MBBS**
- b. Name of the Subject: **PATHOLOGY (PAPER - I) - LEVEL 1 (OMR)**
- c. Subject Code No: **2106000102010101**

- 2. Sketch neat and labelled diagram wherever necessary.
- 3. Figures to the right indicate full marks of the question.
- 4. All questions are compulsory.

Seat No:

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Student's Signature

SECTION – I

Q.1 Multiple choice questions (MCQs).

20*1=20

(Instruction: Encircle the correct answer)

1. Mitochondrial DNA differs from Nuclear DNA in :

- a) Being linear and open ended
- b) Having two co copies per somatic cell
- c) Monocistronic transcription pattern
- d) Having Maternal inheritance pattern

2. Wear and Tear pigment is:

- a) Lipofuscin
- b) Haemosiderin
- c) Melanin
- d) Bilirubin

3. Dystrophic calcification is seen in:
 - a) Hypervitaminosis D
 - b) Williams Syndrome
 - c) Atheromatous Plaque
 - d) Renal tubular acidosis
4. Bradykinin effects include all the following **EXCEPT:**
 - a) Smooth muscle contraction
 - b) Vasoconstriction
 - c) Increased Vascular permeability
 - d) Pain
5. Wound contraction is mediated by:
 - a) Collagen
 - b) Elastin
 - c) Myofibroblast
 - d) Granulation tissue
6. Fifth sign of Inflammation " Functiolaesa "was given by :
 - a) Celsus
 - b) Hunter
 - c) Virchow
 - d) Cohnheim
7. Apoptosis is inhibited by :
 - a) P53
 - b) n-myc
 - c) Ras
 - d) bcl2
8. The most potent antigen presenting cell for T lymphocytes is :
 - a) Dendritic cell
 - b) NK cell
 - c) Stem cell
 - d) Macrophage
9. Type I hypersensitivity reaction is mediated by :
 - a) IgG antibody
 - b) IgM antibody
 - c) IgE antibody
 - d) IgA antibody
10. Red infarct is seen in all **EXCEPT:**
 - a) Lung
 - b) Liver
 - c) Intestine
 - d) Spleen

11. Caisson disease is due to:
- a) Fat embolism
 - b) Air embolism
 - c) Thromboembolism
 - d) Amniotic fluid embolism
12. Venous thrombus is associated with following feature:
- a) Tendency to embolise
 - b) Associated with atheroma
 - c) Often with turbulence
 - d) Commonly Mural
13. Syphilitic involvement of aorta is observed mostly in:
- a) Descending aorta
 - b) Arch of Aorta
 - c) Abdominal Aorta
 - d) Bifurcation of Aorta
14. Bombay Phenotype are the individuals who:
- a) Lack of H genes and therefore H substance.
 - b) Possess A and B antigen
 - c) Secrete excessive amount of H substance
 - d) Lack C, D, E antigens
15. "Tombstone" appearance of cells is seen in which type of Necrosis?
- a) Fibrinoid
 - b) Coagulative
 - c) Liquefactive
 - d) Fat
16. Which of the following is malignant tumour?
- a) Papilloma
 - b) Melanoma
 - c) Adenoma
 - d) Osteoma
17. Which one of the following is an example of Metaplasia?
- a) Changes in skeletal muscles in athletes
 - b) Changes in Cardiac muscles due to hypertension
 - c) Barret's Oesophagus
 - d) Hormonal changes in breast and uterus during Pregnancy.

18. Hypercalcaemia is associated with all of the following tumours

EXCEPT:

- a) Small cell carcinoma of the lung
- b) Squamous cell carcinoma of Lung
- c) Adult T cell Leukaemia
- d) Renal cell carcinoma

19. Placental alkaline Phosphatase is raised in :

- a) Teratoma
- b) Seminoma
- c) Endodermal Sinus tumour
- d) Lymphoma Testis

20. Role of L- selectin in inflammation:

- a) Rolling
- b) Adhesion
- c) Homing
- d) Transmigration

SECTION – II

Q.2 Case based question (compulsory to attempt) 13

45 yrs male, intravenous drug abuser presented with weight loss, oral candidiasis, generalized lymphadenopathy and symptoms of multiple opportunistic infections.

- a) What is your Probable diagnosis? 1
- b) Enumerate the investigations carried out to support the diagnosis? 4
- c) Describe the pathogenesis of the disease. 5
- d) Describe the Natural History and stages of the Disease 3

Q.3 Long Essay Questions 27 **(Attempt any 3 out of 4)**

- 1. Define Apoptosis. Describe the molecular mechanisms of Apoptosis. 1+5+3
Illustrate contrasting features of Apoptosis from Necrosis.

- | | |
|--|---------|
| 2. Define Shock. Enumerate the classification and etiology of Shock.
Describe the pathogenesis of Septic Shock. Describe the stages of Shock. | 1+2+3+3 |
| 3. Define Metastasis. Write three different routes of Metastasis.
Describe cell biology of Invasion and Metastasis Cascade. | 1+3+5 |
| 4. Describe the pathogenesis of Cell Injury. Write the distinguishing features of Reversible and Irreversible Cell Injury. | 5+4 |

SECTION – III

Q.4 (Attempt any 8 out of 10) (5 marks Each)

40

- 1) Difference between Transudate and Exudate.
- 2) Describe healing by First intention (Primary Union)
- 3) Enumerate the Liver Function tests and explain the clinical significance of each.
- 4) Enumerate the contrasting features of initiator and promoter carcinogens.
- 5) Describe Mismatched blood transfusion.
- 6) Difference between Kwashiorkor and Marasmus.
- 7) Define Edema. Write pathophysiology of Edema.
- 8) Clinical features and cytogenetic abnormalities of Down Syndrome.
- 9) Enumerate special stains in Amyloidosis.
- 10) Describe Paraneoplastic syndrome.

2106000102010102
Examination February – March 2024
SECOND MBBS
PATHOLOGY (PAPER - II) - LEVEL 1

[Time: Three Hours]

[Max. Marks:100]

Instructions:

- 1. Fill up strictly the following details on your answer book**
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 - b. Name of the Subject : **PATHOLOGY (PAPER - II) - LEVEL 1 (OMR)**
 - c. Subject Code No : **2106000102010102**
- 2. Sketch neat and labelled diagram wherever necessary.**
- 3. Figures to the right indicate full marks of the question.**
- 4. All questions are compulsory.**
- 5. No negative marks**

Seat No:

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Student's Signature

SECTION – I

Q.1 Multiple choice questions (MCQs).

20*1=20

(Instruction: Encircle the correct answer)

1. Erythropoietin is produced by
 - a) Liver
 - b) Lungs
 - c) Bone marrow
 - d) Kidney
2. Which is NOT SEEN in Megaloblastic anaemia?
 - a) Hyper segmented neutrophil
 - b) MCV < 80
 - c) Evidence of dyserythropoiesis
 - d) Giant metamyelocytes
3. Howell Jolly bodies in red cells seen in:
 - a) Hereditary Spherocytosis
 - b) Lead Poisoning
 - c) Post Splenectomy
 - d) Iron deficiency anemia

4. The pathognomonic abnormality in β -thalassaemia minor is:
- a) marked rise in HbA₂
 - b) marked rise in HbF
 - c) marked unconjugated hyperbilirubinaemia
 - d) marked anaemia
5. Small warty vegetations along the lines of closure of Valves on mitral and aortic valves are observed in :
- a) Infective endocarditis
 - b) Rheumatic fever
 - c) Libman-Sach's endocarditis
 - d) Non-Bacterial thrombotic endocarditis
6. The commonest vessel involved in Myocardial Infarction:
- a) Right Coronary artery
 - b) Left Circumflex artery
 - c) Left Anterior Descending artery
 - d) Posterior Descending artery
7. Which of the following is associated with the development of bronchogenic carcinoma and mesothelioma?
- a) Silicosis
 - b) Asbestosis
 - c) Siderosilicosis
 - d) Anthracosis
8. Patients are designated as pink puffers in:
- a) Chronic Bronchitis
 - b) Bronchiectasis
 - c) Emphysema
 - d) Pneumoconiosis
9. Essential diagnostic criteria for nephrotic syndrome in adults is :
- a) Anasarca with orbital puffiness
 - b) 24hrs urinary excretion of protein 3.5 gm or greater
 - c) Hypoalbuminemia
 - d) A constellation of hypertension, hyperlipidemia and lipiduria
10. Typical "Grain Leather" appearance of kidney is seen in :
- a) Benign nephrosclerosis
 - b) Malignant nephrosclerosis
 - c) Nephrocalcinosis
 - d) Necrotising Papillitis

11. Toxic Megacolon is complication of:
- a) Crohn's Disease
 - b) Ulcerative Colitis
 - c) Necrotising Enterocolitis
 - d) Pseudomembranous Colitis
12. The most common site for hydatid cyst is
- a) Liver
 - b) Lungs
 - c) Spleen
 - d) Brain
13. The most common mechanism in pathogenesis of chronic pyelonephritis is
- a) Ascending infection
 - b) Reflux nephropathy
 - c) Obstructive nephropathy
 - d) Haematogenous infection
14. Cirrhosis in Wilson's disease is related to:
- a) Zinc
 - b) Copper
 - c) Mercury
 - d) Iron
15. Ovarian tumour arising from Stromal cells is :
- a) Dysgerminoma
 - b) Brenner tumour
 - c) Granulosa theca cell tumour
 - d) Krukenberg Tumour
16. Giant cell tumour arises from:
- a) Diaphysis
 - b) Metaphysis
 - c) Articular cartilage
 - d) Epiphysis
17. Gout is characterised by deposition of crystals of
- a) Uric acid
 - b) Hydroxy apatite
 - c) Pyrophosphate
 - d) Urate
18. Mutation characteristic of polycythaemia vera
- a) JAK2
 - b) Bcr-abl
 - c) p53
 - d) RAS

19. Medullary carcinoma of thyroid arises from:
- C-cells of thyroid
 - Follicular cells
 - Parathyroid cells
 - Primitive pluripotent cell of thyroid
20. Which type of Nevus most commonly progresses to Malignant Melanoma:
- Blue cell Nevus
 - Spindle cell Nevus
 - Dysplastic Nevus
 - Compound Nevus

SECTION – II

Q.2 Case based Question (Compulsory to attempt) 13

- A 50year male with history of chronic alcohol consumption presented with distended abdomen .ultrasound scan show reduced size of liver.
 - What is the probable diagnosis? 1
 - Describe the pathogenesis of this condition 5
 - Describe gross and microscopic findings. 4
 - Enumerate three Complications of the condition. 3

Q.3 Long Essay Questions: (Attempt any 3 out of 4) 9*3=27

- Describe the Clinical features, pathogenesis and Lab findings in β Thalassemia Major. 3+3+3
- Describe etiopathogenesis, gross and microscopy & complications of ulcerative colitis. 4+3+2
- Describe the Pathogenesis and stages of lobar pneumonia. 3+6

4. Describe etiopathogenesis of Hypertension vascular Disease. Write About Benign and Malignant Nephrosclerosis. 4+5

SECTION – III

Q.4 (Attempt any 8 out of 10) (5 marks each) 40

1. Describe clinical findings, inheritance in von Willebrand disease.
2. Classify germ cell Tumour. Describe Morphological features of Seminoma.
3. Describe Major and Minor criteria to diagnose Rheumatic Heart disease.
4. Write the staging Classification of Hodgkin Lymphoma.
5. Giant cell Tumour of Bone
6. Atherosclerosis
7. Squamous cell carcinoma
8. Lab findings in Megaloblastic Anaemia
9. Describe morphologic features of Fibroadenoma.
10. Describe the Pathogenesis and morphology Of Bronchiectasis.

2106000102020101
Examination February-March 2024
SECOND MBBS
PHARMACOLOGY (PAPER - I) - LEVEL 2

[Time: Three Hours]

[Max. Marks: 100]

Instructions:

1. Fill up strictly the following details on your answer book

a) Name of the Examination : **SECOND MBBS**

b) Name of the Subject : **PHARMACOLOGY (PAPER - I) - LEVEL 2**

c) Subject Code No : **2106000102020101**

2. Sketch neat and labelled diagram wherever necessary.

3. Figures to the right indicate full marks of the question.

4. All questions are compulsory.

5. Answers should be precise and to the point.

6. Give examples and figures if needed.

7. First 20 mins have been allotted to solve multiple choice questions.

Seat No:

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Student's Signature

SECTION – I

Q.1 Multiple choice questions (MCQs)

1*20=20

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

1. Alkaline diuresis is done for treatment of poisoning due to:

- | | |
|-------------------|----------------|
| a. Morphine | b. Amphetamine |
| c. Phenobarbitone | d. Atropine |

2. Which of the following statements best describes an 'orphan drug'?

- a. It is a drug which acts on orphanin receptors
- b. It is a very cheap drug
- c. It is a drug which has no therapeutic use
- d. It is a drug required for treatment or prevention of a rare disease

3. A newborn baby was born with phocomelia. It results due to which drug taken by mother during pregnancy?

- | | |
|-----------------|----------------|
| a. Tetracycline | b. Thalidomide |
| c. Alcohol | d. Phenytoin |

4. In which of the following phases of clinical trials, healthy normal human volunteers participate:
- a. Phase-I
 - b. Phase-II
 - c. Phase-II
 - d. Phase-IV
5. Major neurotransmitter released at ganglion of the sympathetic division of the autonomic nervous system is:
- a. Adrenaline
 - b. Noradrenaline
 - c. Dopamine
 - d. Acetylcholine
6. Botulinum toxin produces skeletal muscle paralysis by
- a. Enhancing release of norepinephrine
 - b. Inhibiting release of acetylcholine
 - c. Direct damage to nerve endings
 - d. Producing hemolysis
7. A patient was given pilocarpine. All of the following can be the features seen in him except:
- a. Sweating
 - b. Salivation
 - c. Miosis
 - d. Cycloplegia
8. Exogenous adrenaline is metabolized by:
- a. AChE
 - b. COMT
 - c. Decarboxylase
 - d. Acetyl transferase
9. Most common dose limiting adverse effect of colchicine is:
- a. Sedation
 - b. Kidney damage
 - c. Diarrhea
 - d. Muscle paralysis
10. Which of the following is a DMARD?
- a. Deferoxamine
 - b. Penicillamine
 - c. Succimer
 - d. Dimercaprol
11. Which prostaglandin helps in cervical ripening?
- a. PGI₂
 - b. PGF₂
 - c. PGE₂
 - d. PGD₂

12. Which of the following compounds acts as a benzodiazepine antagonist?
- a. Flumazenil
 - b. Naloxone
 - c. Furazolidone
 - d. Naltrexone
13. Which of the following has highest potential to cause metabolic syndrome?
- a. Clozapine
 - b. Risperidone
 - c. Quetiapine
 - d. Aripiprazole
14. The rationale for using ethanol in methanol poisoning is that it:
- a. Antagonizes the actions of methanol
 - b. Stimulates the metabolism of methanol and reduces its blood level
 - c. Inhibits the metabolism of methanol and generation of toxic metabolite
 - d. Replenishes the folate stores depleted by methanol
15. Antihistaminics used for motion sickness is:
- a. Cetirizine
 - b. Meclizine
 - c. Diphenhydramine
 - d. Fexofenadine
16. Tachyphylaxis is seen after use of
- a. Tamoxifen
 - b. Morphine
 - c. Ephedrine
 - d. Chlorpromazine
17. Omalizumab is indicated for which of the following conditions?
- a. Multiple myeloma
 - b. Gout
 - c. Bronchial asthma
 - d. Rheumatoid arthritis
18. Time for peak plasma concentration (T_{max}) indicates:
- a. The rate of elimination
 - b. The rate of absorption
 - c. The duration of effect
 - d. The intensity of effect
19. Which of the following undergoes Hoffmann's elimination?
- a. Atracurium
 - b. Pancuronium
 - c. Mivacurium
 - d. Vecuronium
20. Therapeutic drug monitoring is desirable for
- a. Diazepam
 - b. Paracetamol
 - c. Digoxin
 - d. Nitrous oxide

Q.2 Answer in short [any five]:

3*5=15

- a) Enumerate parenteral routes of drug administration. Enlist the advantages of intravenous route.
- b) Write a note on plasma protein binding of drugs.
- c) Define therapeutic index. Explain with the help of diagram.
- d) Explain the pharmacological basis for the use of prostaglandin analogues in glaucoma.
- e) Classify α blockers. Why prazosin is given at bed time?
- f) Explain why succinyl choline produces prolonged apnoea in some patients.

Q.3 Write answers in details [any three]:

5*3=15

- a) Discuss drug antagonism. Compare and contrast competitive and noncompetitive antagonists.
- b) Enumerate various factors affecting action of a drug. Describe any three in detail.
- c) Classify sympathomimetic agents. Write a note on dopamine and dobutamine.
- d) Classify β blockers. Describe uses of β blockers.

Q.4 Case based questions:

10*1=10

A 30 years old male farmer was spraying insecticides in his farm. He developed profuse sweating, lacrimation, excess salivation, labored breathing & pinpoint pupil. He was brought to emergency room. His pulse rate was 50/minute and blood pressure was 90/60 mm Hg.

- a. Which may be the culprit agent? Enumerate the agents which cause actions as seen in the above case. **1+2**
- b. Explain how the agent will cause the above sign and symptoms in the patient. **3**
- c. Which specific antidotes will you give to this patient. Explain the pharmacological basis of use of these antidotes. **1+3**

X

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SECTION – II

Q5 Answer in short [any five]:

3*5=15

- Write a note on antitussive agents.
- Discuss briefly the importance of three different doses of aspirin in therapeutics.
- Compare and contrast first generation antihistaminics and second generation antihistaminics.
- Explain why adrenaline is added to local anesthetics.
- Enumerate the uses and contraindications of morphine.
- Describe the management of paracetamol poisoning.

Q6 Write answers in details [any three]:

5*3=15

- Classify drugs used in asthma. Mention pharmacotherapy for status asthmaticus.
- Enumerate drugs used for treatment of epilepsy. Describe mechanism of action and adverse effects of Phenytoin.
- Classify drugs used in treatment of migraine. Mention pharmacotherapy for an acute attack of migraine.
- Classify antidepressants. Describe the toxic effects of tricyclic antidepressants.

Q7 Case based questions:

10*1=10

► A 60-year-old man came to OPD of GMC Surat with progressive worsening of tremors in hand for past 1 year. He noticed that it was harder to walk. He was walking in shuffling gait, his face was expressionless, pin rolling tremor was found in his hands and cogwheel rigidity was found. He was diagnosed as a case of Parkinsons disease and was prescribed Levodopa and Carbidopa combination.

- Why levodopa is used for treatment of parkinsonism and not dopamine in this case? **1**
- Explain the rationale for combining carbidopa with levodopa. **3**
- Describe the adverse effects of levodopa and carbidopa combination that you will observe at the initiation of therapy in this patient? **3**

- d) After prolonged treatment with this combination (5 years) what changes in response will you see? How will you manage these changes, if needed at all?

3

2106000102020102
Examination February-March 2024
SECOND MBBS
PHARMACOLOGY (PAPER - II) - LEVEL 2

[Time: Three Hours]

[Max. Marks: 100]

Instructions:

1. Fill up strictly the following details on your answer book
 - a. Name of the Examination: **SECOND MBBS**
 - b. Name of the Subject: **PHARMACOLOGY (PAPER - II) - LEVEL 2**
 - c. Subject Code No: **2106000102020102**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Answer should be precise and to the point.
6. Give examples and figures if needed.
7. First 20 mins have been allotted to solve multiple-choice questions.

Seat No:

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Student's Signature

SECTION – I

Q.1 Multiple choice questions.

1*20=20

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

1. Mechanism of action of digoxin is:
 - a. $\text{Na}^+ \text{K}^+$ ATPase pump inhibition
 - b. $\text{Na}^+ \text{H}^+$ ATPase pump inhibition
 - c. $\text{H}^+ \text{K}^+$ ATPase pump inhibition
 - d. $\text{Na}^+ \text{Cl}^-$ ATPase pump inhibition
2. Which of the following antihypertensive is NOT used in pregnancy?
 - a. Methyldopa
 - b. Nifedipine
 - c. Labetalol
 - d. Enalapril
3. Which of the following is a class III antiarrhythmic drug?
 - a. Phenytoin
 - b. Pindolol
 - c. Amiodarone
 - d. Propafenone

4. Which of the following drug causes highest increases in serum High density lipoprotein (HDL)?
- a. Lovastatin
 - b. Gemfibrozil
 - c. Niacin
 - d. Colestipol
5. Which of the following drug is preferentially a venodilator?
- a. Hydralazine
 - b. Minoxidil
 - c. Nifedipine
 - d. Nitroprusside
6. Captopril causes all of the following adverse reactions EXCEPT
- a. Dry cough
 - b. Hypokalemia
 - c. Angioedema
 - d. Dysphagia
7. All of the following antiplatelet drugs are GpIIb/IIIa antagonist EXCEPT:
- a. Prasugrel
 - b. Abciximab
 - c. Tirofiban
 - d. Eptifibatide
8. Filgrastim is used in treatment of:
- a. Anemia
 - b. Neutropenia
 - c. Thrombocytopenia
 - d. Polycythemia
9. Which of the following antithyroid drug is relatively safer in first trimester of pregnancy?
- a. Methimazole
 - b. Propylthiouracil
 - c. Amiodarone
 - d. Carbimazole
10. Drug used in induction of ovulation is:
- a. Clomiphene
 - b. Clomiphene
 - c. Clozapine
 - d. Clevidipine
11. Corticosteroids are contraindicated in all of the following EXCEPT:
- a. Congestive heart failure
 - b. Ileocecal tuberculosis
 - c. Bronchial asthma
 - d. Peptic ulcer
12. Most common toxicity of bisphosphonates used in therapy of osteoporosis is:
- a. Esophageal irritation
 - b. Osteonecrosis of jaw
 - c. Chalkstick fracture of femur
 - d. Osteomalacia

13. Which of the following is adverse effect of Cyclophosphamide?
- a. Cardiomyopathy
 - b. Neuropathy
 - c. Convulsion
 - d. Hemorrhagic cystitis
14. Cyclosporine inhibits proliferation of which of the following cells:
- a. T Cells
 - b. B cells
 - c. Both T cells & B cells
 - d. NK cells
15. The persistent suppression of bacterial growth after limited exposure to some antimicrobial drug is called:
- a. Time dependent killing
 - b. Concentration dependent killing
 - c. Post-antibiotic effect
 - d. Quorum sensing
16. Aminoglycosides can cause which of the following toxicity?
- a. Ototoxicity
 - b. Nephrotoxicity
 - c. Neuromuscular Junction Blockade
 - d. All of the above
17. Cilastatin is given as fixed dose combination (FDC) with:
- a. Clavulanic acid
 - b. Amoxycillin
 - c. Piperacillin
 - d. Imipenem
18. Which of the following antitubercular drug act by inhibiting mycobacterial ATP synthase?
- a. Linezolid
 - b. Levofloxacin
 - c. Ethambutol
 - d. Bedaquiline
19. Which of the following is not an indication of Metronidazole?
- a. Neurocysticercosis
 - b. Pseudomembranous colitis
 - c. Giardiasis
 - d. Amoebiasis
20. Ondansetron act as an antiemetic by its which of the following action?
- a. Substance P antagonism
 - b. D₂ receptor antagonism
 - c. 5-HT₃ receptor antagonism
 - d. Cannabinoid (CB₁) receptor antagonism

Q.2 Answer in short [any five]:

3*5=15

- Enumerate drugs used in pharmacotherapy of peptic ulcer. Describe mechanism of action of proton pump inhibitors (PPIs).
- What is antimicrobial drug resistance? Describe mechanisms underlying antimicrobial drug resistance.
- Elaborate two prolactin inhibitors giving their uses and adverse effects.
- Write the mechanism of actions and adverse reactions of tetracycline.
- Enlist drugs used in osteoporosis. Write mechanism of action and two adverse reactions of bisphosphonates.
- What is informed consent? Explain its importance in clinical practice with an example.

Q.3 Write answers in details [any three]:

5*3=15

- Discuss role of nitrates in angina pectoris.
- Describe the mechanism of action and therapeutic uses of ACE inhibitors.
- Enumerate oral iron preparation. Describe adverse effects and drug interactions of oral iron therapy.
- Pharmaco-therapy for urinary tract infection (UTI).

Q.4 Answer the following questions based on the given case scenario:

10*1=10

A 35-year-old female patient had recurrent episodes of nose bleed accompanied by severe headache since last few days. On examination his blood pressure and pulse were 170/90 mm of Hg and 100/minute, respectively. The diagnosis is essential hypertension.

- Write drug therapy for managing this patient.
- Describe the mechanism of action and two adverse drug reactions to chosen drugs.
- Describe drugs used for treatment of hypertension in pregnancy?

4

4

2

SECTION – II

Q.5 Write answers in short [any five]:

3*5=15

- Describe advantages of Low molecular weight heparin (LMWH) over unfractionated heparin (UFH).

- b. Describe the rationale of 'Boosted PI regimen' in pharmacotherapy of HIV.
- c. Write a short note on low dose aspirin.
- d. What is counterirritation? Describe various counterirritants used topically for relieving muscular pain.
- e. Write rationale of combining aluminium hydroxide and magnesium hydroxide as antacids.
- f. Describe mechanism of action of penicillin in treatment of gram-positive bacterial infection. Enumerate its clinically important adverse reactions.

Q.6 Write answers in details [any three]:

5*3=15

- a. Write a short note on thiazides.
- b. Outline pharmacotherapy of hyperthyroidism.
- c. Describe adverse drug reactions of corticosteroids.
- d. Mention mechanism of action and uses of fluoroquinolones.

Q.7 Answer the following questions based on the given case scenario:

10*1=10

A 21-year-old lady from Orissa presents in clinic with a history of fever, anorexia and weakness since last two days. Fever is intermittent in nature accompanied by chills & rigors. Blood smear examination showed *P. falciparum*. The diagnosis is *P. falciparum* malaria.

- a. Mention suitable drug therapy for this patient. 3
- b. Explain the rationale behind artemisinin-based combination therapy (ACT). 4
- c. Enumerate two drugs used for chemoprophylaxis of malaria along with their adverse reactions. 3

END OF THE EXAMINATION