MBBS SECOND PROFESSIONAL

GENERAL PATHOLOGY AND MICROBIOLOGY

MULTIPLE CHOICE MODEL QUESTION PAPER

Time Allowed: 1 Hour 15 minutes Maximum Marks: 65

65 MCQs with one best answer distributed according to modules and topic of specifications
with key (Bold And Underlined)

Each question carries one mark

ENCIRCLE THE ONE BEST ANSWER

MODULE 1
CELL INJURY (4)

01. "Psammoma bodies" in certain papillary neoplasm such as those of ovary and thyroid gland are calcified bodies. These are formed as a result of:
A. Metastatic calcification
B. Necrosis
C. Reaction of native tissue
D. **Dystrophic calcification**
E. Bone involvement by the tumor

02. Which of the cell organelles must irreversibly lose its function before cell injury becomes irreversible?
A. Nucleus
B. Endoplasmic reticulum
C. Golgi apparatus
D. **Mitochondria**
E. Ribosome

03. A 30-year-old alcoholic presents with right hypochondrial pain with no other systemic complaints. On exmination he is found to have mild hepatomegaly. He is advised a needle biopsy of the liver. What change is most likely to be found in the liver biopsy?
A. Cholestasis
B. **Steatosis**
C. Fibrosis
D. Hyperplasia
E. Necrosis

04. Histopathological examination of liver biopsy from a patient of chronic viral Hepatitis C shows numerous deeply eosinophlic bodies within hepatic lobules, with dense nuclear chromatin fragments. These most likely represent:
A. **Apoptotic hepatocytes**
B. Necrotic hepatocytes
C. Metaplastic hepatocytes
D. Malignant cells
E. Lymphocytes

MODULE 2
INFLAMMATION AND MEDIATORS OF INFLAMMATION (6)

05. A 12-year-old boy presents with right iliac fossa pain and fever. He is diagnosed to have acute appendicitis. Which of the following mediators is involved in causation of both pain and fever?

A. Nitric oxide
B. Bradykinin
C. **Prostaglandins**
D. Leukotriene B4
E. Histamine

06. Which of the following is the most efficient microbial killing mechanism of neutrophils?

A. Lysosomal enzymes
B. Toxic oxygen intermediates
C. **H_2O_2-MPO-Halide system**
D. Myeloperoxidase.
E. Defensins

07. A school going boy with a history of Streptococcal phyrangitis subsequently develops chest pain that is relieved on leaning forward and aggravated by lying down. On auscultation the clinician detects a murmur. He orders a pericardial tap and sends the specimen to the hospital laboratory for analysis. The fluid shows protein content more than 3.0 gm/dl and specific gravity more than 1.015. The fluid is best described as:

A. **Exudate**
B. Transudate
C. Effusion
D. Isotonic fluid
E. Serous fluid

08. The major role of Prostaglandins D2, E2 and F2 in inflammation is:

A. Chemotaxis
B. **Vasodilation**
C. Vasoconstriction
D. Promotion of platelet aggregation
E. Increase vascular permeability

09. Exogenous pyrogens stimulate production of cytokines. What is the role of cytokines in the eventual production of fever?

A. **Stimulate prostaglandin synthesis**
B. Recruit neutrophils to kill bacteria
C. Act directly on hypothalamus
D. Stimulate production of C reactive protein
E. Cause increased production of fibrinogen

10. In granulomatous inflammation, epithelioid cells are derived from:

A. **Macrophages**
B. Epithelial cells
C. Lymphocytes
D. Fibroblasts
E. Smooth muscle cells

MODULE 3
HEALING AND REPAIR (2)

11. A 20-year-old Negroid man from Makkran coast was stabbed on the upper arm, he received emergency treatment and his wound healed. He developed a raised hypertrophic scar with boundaries beyond the original wound, and it did not regress. Which of the following terms best describes this condition?

A. Cicatrix
B. **Keloid**
C. Callus
D. Granulation tissue
E. Wound

12. A group of sailors was rescued from a ship that was lost for a month. They lived on fish recovered from the sea. They were all fatigued and had gums bleeding on eating anything hard. What is the most likely cause?

A. **Scurvy**
B. Vitamin K deficiency
C. Ehlers-Danlos syndrome
D. Osteogenesis imperfecta
E. Marfan syndrome

MODULE 4
DISORDERS OF CIRCULATION (4)

13. A 55-year old male patient of chronic liver disease presents with massive ascites. You perform a therapeutic tap. Lab reports a protein content of less than 1.0g/dl in the fluid you aspirated from the abdominal cavity. What is the most likely cause of ascites in this patient?

A. Lymphatic obstruction due to enlarged liver
B. Sodium retention
C. Chronic inflammation of peritoneal surfaces
D. **Decreased plasma oncotic pressure**
E. Excessive salt intake

14. Which single factor can result in thrombosis independent of other factors?

A. Hypercoaguable state
B. **Endothelial injury**
C. Turbulence in blood flow
D. Stasis of blood
E. Decreased mobility of the patient

15. A cholecystectomy specimen is examined fresh in the lab. It shows a large impacted gallstone in the neck. Fundus of the gallbladder shows engorgement of blood vessels on external surface. This is most likely due to:

A. A malignant process
B. Hemorrhage
C. Hyperemia
D. **Congestion due to obstruction to outflow of blood**
E. Chronic inflammation

16. A 70-year-old female undergoes hip replacement surgery. Two days later she develops tachypnea and delirium, which progressed to coma. Peripheral blood showed anemia and thrombocytopenia. What is the most likely diagnosis?

A. Wound infection
B. **Fat embolism**
C. Myocardial infarction
D. Hypovolemic shock
E. Deep venous thrombosis

MODULE 5
MICROBIOLOGY
PARASITOLOGY (5)

17. **A 60-year old businessman returns to Pakistan after a 2-month long trip to the Middle East. A week later he presents with gross hematuria. Urine examination shows pear shaped ova with large terminal spine. Which of the following is most likely responsible for this patient's symptoms?**
    A. **Schistosoma haematobium**
    B. Schistosoma japonicum
    C. Schistosoma mansoni
    D. Wuchereria bancrofti
    E. Trypanosoma cruzi.

18. **A family goes fishing; one of them ingests a half cooked fish. Which of the following parasites may be ingested?**
    A. Hymenolepis nana
    B. Taenia solium
    C. **Diphyllobothrium latum**
    D. Schistosoma japonicum
    E. Strongyloides stercoralis

19. **A 28-week pregnant woman has a disease transmitted by cat faeces. It presents a great risk to her unborn child. Which of the following is likely to be responsible?**
    A. Causative organism of cat scratch disease
    B. Enterobius vermicularis
    C. Toxocara
    D. Wuchereria bancrofti
    E. Toxoplasma gondii

20. **An old man from a mosquito infested area of Waziristan presented with massive edema of left leg and foot. He gives history of repeated attacks of sudden high fever with rigors lasting two to three days. On examination he has unilateral hydrocoele on the affected side. Which of the following parasite is the most likely etiological agent?**
    A. Plasmodium vivax
    B. **Wuchereria bancrofti**
    C. Aedes egyptii
    D. Mansonella ozzardi
    E. Plasmodium falciparum

21. **Recommendations for the control of human hookworm in endemic areas include among others:**
    A. Thorough washing of fresh fruits and vegetables
    B. Thorough cooking of all meats
    C. Reduction of the wild dog population
    D. **Wearing protective footwear**
    E. Use of insecticides to control flies

VIROLOGY (6)

22. **A 22-year old female college student has splenomegaly. Labs show an elevated WBC count and heterophil antibodies. What is she most likely suffering from?**
    A. Mumps
    B. Parainfluenza
    C. Rubella
    D. **Infectious mononucleosis**
    E. Lymphocytic choriomeningitis

23. **A woman develops "Hepatitis" two months after she was transfused with 10 units of whole blood. She is found to have neither HBsAg nor anti HbsAg. What is the most likely cause of her disease?**
    A. Hepatitis A virus
    B. **Hepatitis C virus**
    C. Cytomegalovirus
    D. Influenza virus
    E. Hepatitis B virus

24. **A 35-year old man is brought to a Tehsil Headquarter hospital in southern Punjab following a road traffic accident. He requires urgent blood transfusion and is transfused unscreened whole blood. His medical record retrieved later reveals that he is a chronic carrier of Hepatitis B virus. Two weeks later the patient dies of fulminant hepatic failure. What transfusion related incidence do you suspect most in this case?**
    A. ABO incompatible blood transfused
    B. Rh incompatible blood transfused
    C. **Transmission of HDV**
    D. Transmission of HCV
    E. Transmission of HGV

25. **A thirty-year-old man, married for 2 years presents with infertility. Medical history is insignificant except for the history of parotiditis 5 years ago. Which of the following is the most likely explanation for his infertility?**
    A. **Mumps orchitis**
    B. Bilateral undescended testes
    C. Tuberculous orchitis
    D. Gonadal agenesis
    E. Hyperprolatinemia

26. **A 35-year-old female patient of chronic Hepatitis B is pregnant. Which of the following tests will you order to assess the risk of her passing the infection to her child?**
    A. Hepatitis B surface antigen
    B. Anti HBs antibody
    C. **HBe antigen**
    D. HBc antigen
    E. Anti HBc antibody

27. **Which of the following viruses is associated with human cervical cancer?**
    A. HHV8
    B. **H PV 16 and 18**
    C. HPV 1-4
    D. Epstein Barr virus
    E. Cytomegalovirus

GENERAL BACTERIOLOGY (4)

28. In the gram stain the decolorization of Gram-negative bacteria by alcohol is most closely related to

A. Proteins encoded by F plasmids
B. **Lipids in cell wall**
C. 70 S ribosomes
D. Branched polysaccharides in the capsule
E. Teichoic acids

29. A laboratory worker is asked to sterilize a pair of surgical gowns in an autoclave. What are the recommendations he should follow for setting the temperature and time?

A. **121° C for 15-20 min**
B. 150° C for 10 min
C. 100° C for 30 min
D. 200° C for 5 min
E. 15° C for 15 min.

30. Which of the following correctly explains the process of pasteurization of milk?

A. **Heating milk to 62° C for 30 min followed by rapid cooling**
B. Slowly heating to 100° C and slow cooling
C. Heating milk to 50° C for 30 min followed by rapid cooling
D. Slowly heating milk to 50° C for 15 min followed by rapid cooling
E. Heating milk to 20° C for 30 min followed by rapid cooling

31. Which one of the following BEST describes the mode of action of endotoxin?

A. Blocks the release of acetylcholine
B. **Causes release of tumor necrosis factor**
C. Inactivates elongation factor 2
D. Degrades lecithin in cell membrane
E. Releases interleukins

SPECIAL BACTERIOLOGY (14)

32. Which of the following set of findings will most favor a diagnosis of viral meningitis over bacterial meningitis 48 hours after the development of neck rigidity?

A. **Lymphocytosis, normal/ slightly elevated glucose**
B. Lymphocytosis, markedly elevated glucose concentration
C. Lymphocytosis, low glucose
D. Polymorphonuclear leukocytosis, normal/elevated glucose
E. Polymorphonuclear leukocytosis, low glucose

33. Which of the following tests differentiates pneumococci from other streptococci?

A. **Bile solubility**
B. Alpha hemolysis
C. Growth on blood agar
D. Resistance to optochin
E. Methicillin resistance

34. **A 14-year-old boy presents with a 2-week history of high-grade fever of stepladder pattern. Widal test shows TO titer rising from 1: 80 to 1: 160 over the next 07 days. What is the best interpretation of the test result?**
    A. **Active infection**
    B. Past infection.
    C. Previous vaccination.
    D. Carrier state.
    E. Immunocompromised state

35. **Which of the following groups of females is most likely vulnerable to urinary tract infections?**
    A. Adolescent girls
    B. Teenage girls.
    C. **Sexually active females**.
    D. Women living in areas with suboptimum sanitation
    E. Pregnant women

36. **Which of the following enriched medium is employed for the isolation of gonococci?**
    A. Eosin Methyl Blue Medium.
    B. Chocolate agar.
    C. **Thayer Martin medium**.
    D. Blood agar.
    E. Mac Conkeys agar

37. **A junior house officer working in the pulmonology ward calls the hospital laboratory and inquires about report of Mycobacterial culture of the sputum of one of his patients two days after the specimen was submitted. The microbiology resident tells him that he is unable to issue a final report at this time. What is the most likely reason behind his refusal to issue a report?**
    A. The specimen was inadequate
    B. Mycobacteria cannot be cultured in vitro
    C. Mycobacteria are never expelled in sputum
    D. There was a delay in sub culturing and biochemical testing
    E. **Mycobacterial colonies require 4-8 weeks to grow on culture media**

38. **What appearance would Mycoplasma colonies show when grown on cholesterol rich media?**
    A. Boiled egg appearance
    B. **Fried egg appearance**
    C. Beta hemolysis
    D. Mucoid colonies
    E. Swarming

39. **What type of bacterial infections are a leading cause of blindness in Africa and Asia?**
    A. Chlamydia trachomatis D-K
    B. **Chlamydia trachomatis A-C**
    C. Mycoplasma species
    D. Francisella
    E. Opthalmia neonatarum

40. **In tuberculoid leprosy the growth of Mycobacterium leprae is limited by:**
    A. Antibodies to bacterial antigen
    B. Necrosis of infected tissue
    C. Proliferation of tissue histiocytes
    D. **Cell mediated immunity**
    E. Giant cell formation

41. **One of your classmates is having evening rise in temperature and night sweats. His physician advises a tuberculin test. After 24 hours you measure a 12mm area of skin induration at the site of injection. How will you interpret the result?**
    A. The patient has active tuberculosis
    B. There is no exposure to tubercle bacilli
    C. Loss of cell mediated immunity
    D. Miliary tuberculosis
    E. **The patient has been exposed to tubercle bacilli**

42. **A woman develops fever, rash and polyarthralgia during menstruation. Gram stain of the synovial fluid of her right knee reveals Gram-negative bacteria. Which of the following organisms is most likely responsible?**
    A. H.influenzae
    B. Staphylococcus aureus
    C. **Niesseria gonorrheae**
    D. Pseudomonas aeruginosa
    E. Mycobacterium tuberculosis

43. **The most common site of human E.coli infection is the urinary tract. Which of the following best explains this tropism for the urinary tract?**
    A. E coli is part of normal flora of the bladder
    B. Splits urea by its urease activity
    C. Utilizes carbon dioxide from urea hydrolysis
    D. **Adheres to specific binding sites on uroepithelial cells**
    E. Resists most urinary tract antimicrobial agents

44. **A man with chills fever and headache is thought to have atypical pneumonia. History reveals that he raises pigeons, and that approximately two weeks ago he lost a large number of them to an undiagnosed disease. The most likely diagnosis of this man's condition is:**
    A. Anthrax
    B. Q fever
    C. Relapsing fever
    D. Leptospirosis
    E. **Psittacosis**

45. **Which of the following is the classical manifestation of an anaerobic infection?**
    A. Blood stream infection
    B. Meningitis
    C. Cellulitis
    D. Urinary tract infection
    E. **Abscess**

MYCOLOGY (FUNGI) (4)

46. **A 40 yr old man goes cave exploring, where he comes across a lot of bats. Which of the following infectious agent is he likely exposed to?**
    A. **Histoplasma capsulatum**
    B. Staphylococcus aureus
    C. E. coli
    D. Chlamydia psittaci
    E. Cryptococcus neoformans

47. A 28 yr old woman presents in the third trimester of pregnancy with vaginal infection. Which of the following organisms occurs more frequently than normal?

A. **Candida**
B. Aspergillus's
C. Staphylococcus aureus
D. E. coli
E. Pseudomonas aeruginosa

48. Which of the following is the route of transmission for a dermatophytic infection?

A. Feco-oral transmission
B. Inhalation of the organism
C. Sexually transmitted
D. **Direct contact**
E. IV drug abuse

49. Visualization of fungi in a clinical specimen is facilitated by treatment of the specimen with:

A. Silver nitrate
B. Hydrochloric acid
C. **Potassium hydroxide**
D. Para-amino benzoic acid
E. Griseofulvin

MODULE 6
GENETICS (2)

50. Autosomal dominant disorders are different from autosomal recessive ones because:

A. Complete penetrance is common in them
B. **They are manifested in the heterozygous state**
C. Onset is early in life
D. All carriers are males
E. All sufferers are females

51. A 28-year-old female, known carrier of hemophilia A, is pregnant. Considering that hemophilia is an X-linked disease, what is the most useful information you can obtain from karyotyping on chorionic villous biopsy specimen of this patient?

A. Possible cytogenetic abnormality in the fetus
B. Rule out aneuploidy
C. **Information about sex of the fetus**
D. Rule out trisomy
E. Determine risk of mental retardation in the fetus

MODULE 7
DISORDERS OF GROWTH (9)

52. A 30-year old primaegravida develops postpartum hemorrhage due to uterine atony after delivering a healthy male child and hysterectomy is performed after all other measures fail to stop the bleeding. Histological sections from the uterus show increased thickness of muscle layer (myometrium). What is the most likely underlying process?

A. Pathological hyperplasia
B. **Compensatory hyperplasia**
C. Hormonal hyperplasia
D. Metaplasia
E. Neoplastic change

53. Which chemical carcinogen is implicated in causation of Hepatocellular carcinoma?

A. Griseofulvin
B. Nitrosamine
C. **Aflatoxin B1**
D. Betel nuts
E. Benzidine

54. A 55-year-old female is diagnosed with ovarian carcinoma. Cytological analysis of ascitic fluid shows malignant cells. Which property of malignant tumors best explains this?

A. **Seeding of body cavities**
B. Hematogenous spread
C. Lymphatic spread
D. Direct extension
E. Local invasion

55. Which of the following is the most important factor in sustained angiogenesis by tumors?

A. Endothelial growth factor
B. p53
C. Fibroblast growth factor
D. **Vascular endothelial growth factor**
E. Epidermal growth factor

56. A 26-year-old female patient presents with abdominal pain and is found to have an 18-week sized abdominal mass originating from uterus. A laparotomy is done and the mass is excised. Histopathology shows a well-circumscribed lesion composed of smooth muscle cells not different from those in normal myometrium, with no evidence of local invasion or metastasis. The mass is most likely a:

A. Carcinoma
B. Sarcoma
C. Hamartoma
D. Aborted fetus
E. **Benign tumor**

57. A 45-year-old male patient of Chronic Hepatitis C is found to have a 3cm space-occupying lesion in the right lobe of the liver. Which of the following tumor markers will you order?

A. **Alpha feto protein**
B. Prostate specific antigen
C. Carcinoembrynic antigen
D. CA 125
E. Beta HCG

58. What is the most important prognostic factor for human cancer?

A. Grade
B. **Stage**
C. Lymphocytic infiltration
D. Vascular invasion
E. Mitotic index

59. Which of the following cells are quiescent or stable regarding proliferative activity?

A. Neurons
B. Cardiac myocytes
C. Epidermal cell
D. **Hepatocytes**
E. GIT epithelial cells

60. Cells respond to increased demand by:

A. Metaplasia
B. Apoptosis
C. Atrophy
D. **Hyperplasia**
E. Dysplasia

MODULE 8
IMMUNOLOGY (5)

61. Membranous glomerulonephritis, an autoimmune disease, is characterized by widespread thickening of glomerular capillary walls. This thickening is attributed to:

A. **Deposition of antigen-antibody complexes**
B. Fibrosis
C. Chronic inflammation
D. Acute inflammation
E. Delayed type of hypersensitivity

62. Which type of immunity provides us with defense against intracellular microbes?

A. Humoral immunity
B. **Cell mediated immunity**
C. Natural immunity
D. Immune complex mediated hypersensitivity
E. Immediate type of hypersensitivity

63. An HIV positive patient presents with long standing fever, weight loss, diarrhea and protracted respiratory tract symptom. Which test will you order to assess the immune status of this patient?

A. CD8+ lymphocyte count
B. **CD4+ lymphocyte count**
C. Sputum culture
D. Total leukocyte count
E. e Absolute Neutrophil count

64. Following an IV dose of penicillin, a middle-aged man develops skin rash and breathing difficulty followed by hypotension and shock. The hypersensitivity reaction is most likely mediated by which of the following?

A. C3b
B. **IgE**
C. IgM
D. Prostaglandins
E. CD 4+ lymphocytes

65. A graft kidney donated by an identical twin will not be rejected because:

A. There is ABO blood group matching
B. There is Rh blood group matching
C. **There is HLA matching**
D. Recipeint is immunosuppressed
E. Donor organ lacks antigenicity