



PUNJAB TECHNICAL UNIVERSITY JALANDHAR

Max. Marks: 90

Time: 90 Mins.

Entrance Test for Enrollment in Ph.D. Programme

Important Instructions

- Fill all the information in various columns, in capital letters, with blue/black ball point pen.
- Use of calculators is not allowed. Use Blue/Black ball point pen for attempting the questions.
- All questions are compulsory. No negative marking for wrong answers.
- To attempt a question, make a tick mark (✓) at the right option/answer.
- Each question has only one right answer.
- Questions attempted with two or more options/answers will not be evaluated.

Subject (Engg./Arch./Pharm./Mgmt./Sciences) APP. SCI.

Discipline / Branch MLT

Name

Father's Name

Roll No. Date : **10-07-2010**

Signature of Candidate

Signature of Invigilator

Q 1. Which of the following fixative is used for exfoliate cytology ?

- a) Acetone
- b) Xylene
- c) Alcohol
- d) Hydrochloric acid,

Q 2. Bacterial enzymes may cause group A people to acquire which of the following

- a) Altered antigen
- b) New B ntigen
- c) Very similar to B antigen
- d) Loss of all antigens

Q 3. Shelf life of CPDA is

- a) 21 days
- b) 28 days
- c) 35 days
- d) 42 days

Q 4. Which of the statement is not true

- a) Rh antigens are well developed at birth
- b) Weakened expression of D antigen is called Partial -D
- c) Rh gene is present on chromosome no 1
- d) Rh D is most antigenic

Q 5. Which of the following HIV western blot pattern should be interpreted as positive

- a) p24 and p41 gp120
- b) p24, p31, p17, p55
- c) gp 41
- d) p31, p17,p55

Q 6. What is the normal value of blood urea in a healthy individual when tested by Diacety monoxime method.

- a) 5-10 mg/dl
- b) 15-40mg/dl
- c) 50-60mg/dl
- d) 70-80mg/dl

Q 7. The number of ATP's produced in Hexose monophosphate shunt is

- a) 8
- b) 12
- c) 4
- d) None

Q 8. Red cells repel each other because their membrane have

- a) Zeta potential
- b) MB/p ficalin terminal(alternatively)
- c) Neuraminic acid
- d) Negative charge due to neuraminic acid

Q 9. What is the function of high density lipoprotein

- a) Forward cholesterol transport
- b) Reverse cholesterol transport
- c) Bidirectional cholesterol transport
- d) Chylomicron transport

Q 10 The following enzyme is deficient in Von Gierke's disease

- a) Glycosidase
- b) Isomerase
- c) Glucose 6 phosphatase
- d) Oxidase

Q .11 Vitamins A, C, E are

- A) Fat soluble vitamins
- B) Antioxidants
- C) Water soluble vitamins
- D) Important for proper vision

Q 12 Which one of the following is Not true for the lens of the eye ball.

- a) It is derived from Endoderm
- b) It is surrounded by lens capsule
- c) It is Avascular
- d) It is devoid of nerve fibers

Q 13 Which of the following nerve is Not from the ventral rami of the spinal nerves

- a) Greater auricular nerve
- b) Lesser occipital nerve
- c) Greater Occipital nerve
- d) Supra clavicular nerve

Q 14 Which of the following vertebra is also known as the vertebra prominens?

- a) 7th cervical vertebra
- b) 2nd cervical vertebra
- c) 5th Lumbar vertebra
- d) 9th thoracic vertebra

Q 15 . Which of the following structures does not pass deep to flexor Retinaculum of the wrist

- a) Flexor digitorum superficialis
- b) Flexor pollicis longus
- c) Median nerve
- d) Ulnar Nerve

Q 16. A patient's fasting blood sugar is 116mg/dl what is the probable diagnosis

- a) Diabetes mellitus
- b) Diabetes insipidus
- c) Impaired fasting glucose
- d) Renal glycosuria

Q 17. Glucose and Fructose are

- a) Epimers
- b) Isoenzymes
- c) Isomers
- d) Polysaccharides

Q 18 Unlocking of the knee joint to permit flexion is caused by which muscle

- a) Articularis genu
- b) Biceps femoris muscle
- c) Popliteus muscle
- d) Soleus muscle

Q 19. Which of the following cells are responsible for the secretion of Hydrochloric acid in the lumen of the stomach?

- a) Parietal Cells
- b) Chief cells
- c) Paneth cells
- d) Enterocytes

Q 20 Which of following drug is used for the treatment of invasive aspergillosis

- a) Varicazole
- b) Amphotericin -B
- c) Itraconazole
- d) All of above

Q .21 In which following condition Cryptococcus neoformans start to develop capsule around it

- a) In infected tissue
- a) In soil medium
- b) Culture at 37°C
- c) Broth medium

Q 22. Presence of sulphur granules in pus indicate the etiological agent would be

- a) Aspergillus
- b) Nocardia
- c) Actinomyces
- d) Cryptococcus

- Q 23. Fungal meningitis is caused by
- Cryptococcus sp
 - Aspergillus sp
 - Histoplasma sp
 - Coccidiomycosis
- Q 24 Etiological agent that causes farmer's lung disease
- Aspergillus fumigatus
 - Histoplasma capsulatum
 - Micromonospora faeni
 - Tricophyton rubrum
- Q 25 Allergic response to aspergilosis is associated with
- Hypersensitivity type I
 - Hypersensitivity type II
 - Hypersensitivity type III
 - Hypersensitivity type IV
- Q 26 Which of the statement is not true for Trachea
- It lies anterior to the esophagus in the superior mediastinum
 - It bifurcates at the level of 4th thoracic vertebra.
 - Its left principal Bronchus is wider than the right principal bronchus
 - It starts at level of 6th cervical vertebra
- Q 27. . The systematic mycosis that spread through pigeon droppings is
- Blastomycosis
 - Cryptomycoccosis
 - Coccidioidomycosis
 - Histoplasmosis
- Q. 28. Which of the following is not associated with madhura foot disease
- Medulla mycetoni
 - Nocardia brasillensis
 - Allercheria boydii
 - Candida albicans
- Q 29. Measles:
- can be prevented through immunization with a live attenuated strains
 - causes fetal abnormalities if the mother becomes infected during pregnancy
 - is most infectious before the onset of symptoms
 - is associated with secondary bacterial infection which is the main cause of mortality
- Q 30. Which of the following produces aflatoxin?
- Aspergillus fumigatus
 - Aspergillus niger
 - Aspergillus flavus
 - Tricophyton rubrum

- Q 31 Vast majority of (more than 90%) of post transfusion hepatitis is caused by
- HBV
 - HCV
 - HDV
 - HAV
- Q 32 Ig G:
- has a molecular weight of 150000
 - is the principal immunoglobulin in secondary immune response
 - is important in mucosal immunity
 - is the most common circulating immunoglobulins in the serum
- Q 33. The following are true about antigen presenting cells (APC):
- Langerhan's cells are the antigen presenting cells of the epidermis
 - neutrophils are antigen presenting cells
 - CD8+ cells only recognize antigen presenting cells bearing MHC (major histocompatibility complex) class I
 - tumour necrosis factor alpha (TNF α) can turn endothelial cells into antigen presenting cells.
- Q 34. Which form of reasoning is the process of drawing a specific conclusion from a set of premises?
- rationalism
 - deductive reasoning
 - inductive reasoning
 - probabilistic
- Q 35. Research that is done to examine the findings of someone else using the "same variables but different people" is which of the following?
- exploration
 - hypothesis
 - replication
 - empiricism
- Q 36. . which of the following is a branch of the Axillary artery
- Vertebral Artery
 - Profunda Brachii Artetry
 - Subscapular Artetry
 - Internal thoracic Artety.
- Q 37 What is most appropriately true about a highly ionised drug:
- is well absorbed from the intestine
 - is excreted mainly in the kidney
 - Crosses the placental barrier easily
 - is reabsorbed from the renal tubule

Q 38 Which of the following is a form of research typically conducted by teachers, counselors, and other professionals to answer questions they have and to specifically help them solve local problems?

- a) action research
- b) basic research
- c) predictive research
- d) orientation research

Q 39. How much confidence should you place in a single research study?

- a) you should completely trust a single research study.
- b) you should trust research findings after different researchers have found the
- c) same findings
- d) neither a nor b
- e) both a and b

Q 40 Glands of Burnmer's are located in which of the following?

- a) Esophagus
- b) Stomach
- c) Duodenum
- d) Appendix

Q 41. Which of the following is not a basic assumption of science?

- a) Science cannot provide answers to all questions
- b) It is possible to distinguish between more and less plausible claims
- c) Researchers should follow certain agreed upon norms and practices
- d) Science is best at solving value conflicts, such as whether abortion is immoral

Q 42 . Which of the following statements is true of a theory?

- a) it most simply means "explanation"
- b) it answers the "how" and "why" questions
- c) it can be a well developed explanatory system
- d) all of the above are correct

Q 43. According to your text, how many points should a rating scale have?

- a) Five
- b) Two
- c) Ten
- d) 4 to 11 points

Q 44. You should mix methods in a way that provides complementary strengths and nonoverlapping weaknesses. This is known as the fundamental principle of mixed research.

- a) True
- b) False
- c) doubtful
- d) None

- Q 45. Which of these is not a method of data collection.
- Questionnaires
 - Interviews
 - Experiments
 - Observations
- Q 46. Which of the following terms best describes data that were originally collected at an earlier time by a different person for a different purpose?
- Primary data
 - Secondary data
 - Experimental data
 - Field notes
- Q 47. Another name for a Likert Scale is a(n):
- Interview protocol
 - Event sampling
 - Summated rating scale
 - Ranking
- Q 48. A question during an interview such as “Why do you feel that way?” is known as a:
- Probe
 - Filter question
 - Response
 - Pilot
- Q 49 . A census taker often collects data through which of the following?
- Standardized tests
 - Interviews
 - Secondary data
 - Observations
- Q 50. Which of the following is not a major method of data collection?
- Questionnaires
 - Focus groups
 - Correlational method
 - Secondary data
- Q 51. When constructing a questionnaire, there are 15 principles to which you should adhere. Which of the following is not one of those principles?
- Do not use "leading" or "loaded" questions
 - Avoid double-barreled questions
 - Avoid double negatives
 - Avoid using multiple items to measure a single construct
- Q 52. There is leucocytosis if the TLC is
- more than 1000/dl
 - More than 3000/dl
 - More than 11000/dl
 - More than 5000/dl

- Q 53. The average size of a RBC is
- 6.3 micron
 - 7.3 micron
 - 8.3 micron
 - 9.3 micron
- Q 54. Acid dye used in Leishman Stain is
- Methylene Blue
 - Malachite Green
 - Eosin
 - Carbol fuchsin
- Q 55. Eosinophilia in peripheral blood film indicates
- Bacterial Infection
 - Viral infection
 - Parasitic Infection
 - Fungal infection
- Q 56. Lack of factor V111 (Eight) causes
- Thalasemia
 - Haemolytic anaemia
 - Haemophilia
 - Leukemia
- Q 57. Rene Descartes is associated with which of the following approached to knowledge generation?
- Empiricism
 - Rationalism
 - Expert opinion
 - None of the above
- Q 58. Which scientific method focuses on testing hypotheses developed from theories?
- Deductive method
 - Inductive method
 - Hypothesis method
 - Pattern method
- Q 59. Retroviruses use this enzyme to convert RNA to DNA:
- Viral transcriptase
 - RNA polymerase
 - Reverse Transcriptase
 - RNA Polymerase II
- Q 60. Hepatitis B uses this strategy to evade the immune system:
- Latency
 - Destruction of immune cells via apoptosis
 - Decreased MHC I
 - Defective particles

- Q 61. Cytomegalovirus (CMV) causes the most pathogenicity when this happens in the host:
- Co-infection with HSV1 or HSV-2
 - Immunosuppression
 - Normal healthy individuals
 - CMV is never pathogenic
- Q 62. Which protein has been postulated as a good stimulant of the immune system that could possibly be used in a papilloma vaccine?
- L1 Capsid protein
 - gD envelope glycoprotein
 - E1A early protein
 - F0 membrane protein
- Q.63. To which of these treatments are prions sensitive?
- UV light
 - Boiling
 - Detergents
 - All of these treatments
- Q 64. Which virus vector has been used for the rabies vaccine that is currently in use in the United States for wild animals?
- Canary pox
 - Vaccinia
 - Adenovirus
 - Herpesvirus
- Q 65. In the investigation of bleeding disorders Which is not true
- The bleeding time assesses the intrinsic coagulation pathway
 - The normal bleeding time is 3-10 minutes
 - Blood for coagulation studies is collected into citrate solution to prevent
 - The prothrombin time is prolonged in abnormalities of the extrinsic pathway
- Q 66. With respect to iron metabolism What is not true
- Antacids reduce iron absorption
 - Heme iron is better absorbed than non-heme iron
 - Ferrous iron (2+) is better absorbed than ferric iron (3+)
 - The majority of iron absorption occurs in the terminal ileum
- Q 67. The one thing all species of lentiviruses have in common is:
- All cause immunodeficiency
 - All are caused by insect vectors
 - All are STDs
 - All are blood borne
- Q 68 When HIV invades the brain it causes:
- Dementia
 - Encephalitis
 - Meningoencephalitis
 - Alzheimer's

- Q 69. Which of the following is not a vitamin K dependent clotting factors
- Prothrombin
 - Factor XII
 - Factor VII
 - Factor X
- Q 70. Frozen section is employed for the following except
- Fat demonstration
 - Amyloid
 - Rapid diagnosis
 - Enzymes
- Q 71. Decalcification of calcified tissues and bones is done by the following methods except
- Aqueous nitric acid
 - Chelating agents
 - Glacial acetic acid
 - Microwave
- Q 72. For Counting CD 4 cells in AIDS following method is employed
- In situ hybridization
 - Polymerase chain reaction
 - Flow cytometry
 - Electron Microscopy
- Q 73. Which of the following stain is used for exfoliative cytology for cancer detection ?
- Leishman's
 - Giemsa
 - Papanicolaou
 - May Graunward
- Q 74. Mode of hookworm infection is
- Faecal oral
 - Unprotected sex
 - Penetration
 - Inoculation
- Q 75. Which of the following extracellular enzymes produced by Group A streptococci is called "spreading factor," an enzyme important in skin and soft tissue infection?
- Streptokinase
 - Hyaluronidase
 - M Protein
 - Deoxyribonuclease C
- Q 76. Most common site for hydatid cyst formation is
- Liver
 - Lung
 - Brain
 - Spleen
- Q 77. All Enterobacteriaceae share all of the following characteristics EXCEPT:
- Ferment glucose
 - Reduce nitrates to nitrites
 - Oxidase positive
 - Gram negative

Q 78 Which of the following virulence factors of *E. coli* is important for attachment to host epithelial cells in the pathogenesis of urinary tract infections?

- a). Aerobactin
- b). Alpha hemolysin
- c). Urease
- d). Pili

Q 79. Movement of DNA from one bacteria to another through a tubular bridge or pilus:

- a). Conjugation
- b). Transposition
- c). Transfection
- d). Transduction

Q 80. The polymerase chain reaction (PCR):

- a). Has been adapted for accurate quantification of viruses
- b). May yield false positive results when amplicons contaminate clinical samples
- c). Offers detection sensitivity which often but not always exceeds that of culture
- d). All of the above

Q 81. Which of the following is not one of Koch's postulates?

- a). The organism is regularly found in lesions of the disease
- b). The organism can be isolated from diseased tissues in pure culture on artificial media
- c). Inoculation of this pure culture produces a similar disease in experimental animals
- d). Treatment of the disease with a broad spectrum oral antimicrobial dependably eradicates the organism and cures the disease

Q 82. Which of the following diseases are not transmitted by ticks:

- a). Ulceroglandular tularemia
- b). Bubonic plague
- c). Relapsing fever
- d). Lyme disease

Q 83. Characteristics of a bacterial capsule include:

- a). All bacteria have one
- b). It is composed of peptidoglycan
- c). It is an important mechanism for protecting a bacteria against ingestion by PMNs
- d). It is what causes the gram stain reaction

Q 84. Specific organisms that are considered strict anaerobes include:

- a). *E. coli* and *Streptococcus pneumoniae*
- b). *Bacteroides* and *Klebsiella*
- c). *Fusobacterium* and *Clostridium*
- d). *Peptostreptococcus* and *Nocardia*

Q 85. The single most important characteristic of diarrhea caused by *Vibrio cholera* is:

- a). Profound watery diarrhea
- b). Severe abdominal pain
- c). Massive bloody diarrhea
- d). Renal insufficiency

- Q 86. *Helicobacter pylori*:
- a). Is the presumed cause of colon cancer
 - b). Is the cause of most cases of acute food poisoning in the U.S.
 - c). Is the cause of about 90% of peptic ulcers in the U.S.
 - d). Is urease negative

- Q 87. A common type of nosocomial infection is:
- a). Urinary tract infection
 - b). Meningitis
 - c). Cellulitis
 - d). Gastroenteritis

Q 88. Tissues for electron Microscopy are fixed in

- b) Carnoy's Fixative
- c) 10 % buffered formalin
- d) Saline
- e) 4 % glutaraldehyde

Q 89. HIV contaminated waste products can be decontaminated by the following method except

- a) Sodium hypochlorite
- b) Methanol
- c) Formaldehyde
- d) Glutaldehyde

Q 90. CD4 T cell count in crisis phase of HIV according to revised HIV/ AIDS classification is

- a) < 100/ microlitre
- b) <200/ microlitre
- c) <300/microlitre
- d) < 500/ microlitre