



ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ

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.
- All questions are compulsory. No negative marking for wrong answers.
- Each question has only one right answer.
- Questions attempted with two or more options/answers will not be evaluated.

Stream (Engg./Arch./Pharm./Mgmt./App.Sci./Life Sci.)

LIFE SCIENCE

Discipline / Branch

MEDICAL LAB. TECHNOLOGY

Name

Father's Name

Roll No.

Date: **19-11-2011**

Signature of Candidate

Signature of Invigilator

Q. 1 Which one of these is a Prokaryote

- (a) Bacteria
- (b) Virus
- (c) Fungi
- (d) Algae

(d) Non of the above

Q. 6 In order to augment the accuracy of the study a researcher

- (a) should be honest and unbiased
- (b) should increase the size of sample
- (c) should keep the variance high
- (d) All of above

Q. 2 The term 'Vaccine' was coined by

- (a) Robert Koch
- (b) Lord Lister
- (c) Louis Pasteur
- (d) Rox & Yersin

Q. 7 Hypothesis cannot be stated in

- (a) Declarative terms
- (b) Null and question form terms
- (c) General terms
- (d) Directional terms

Q. 3 One Angstrom unit is

- (a) 1/10th of a nanometer
- (b) 1/100th of a nanometer
- (c) 1/1000th of a nanometer
- (d) 1/10000th of a nanometer

Q. 8 The experimental study is based on the law of

- (a) Single variable
- (b) Occupation
- (c) Replication
- (d) Interest of the subject

Q. 4 Resolving power of Electron Microscope is

- (a) 0.1 nm
- (b) 0.2 nm
- (c) 0.5 nm
- (d) 1.0 mm

Q. 9 Which of the following is not the characteristic of a researcher?

- (a) He is industrious and persistent on the trial of discovery
- (b) He is not versatile in his interest and even in his native abilities
- (c) He is a specialist rather than a generalist
- (d) He is objective

Q. 5 If the sample drawn does not specify any condition about the parameter of the population, it is called

- (a) Selected statistics
- (b) Distribution free statistics
- (c) Census

Q. 10 A researcher wants to study the future of the ruling party in India. For the study which tool is most appropriate for him?

- (a) Questionnaire
- (b) Rating scale
- (c) Interview
- (d) Schedule

Q. 11 Which of the following is a non-probability sample?

- (a) Quota sample
- (b) Simple random sample
- (c) Purposive sample
- (d) a and c both

Q. 12 A good hypothesis should be

- (a) Formulated in such a way that it can be tested by the data.
- (b) Precise, specific and consistent with most known facts.
- (c) Of limited scope and should not have global significance.
- (d) All of above.

Q. 13 Field study is related to

- (a) Real life situations
- (b) Laboratory situation
- (c) Experimental situation
- (d) Non of the above

Q. 14 A researcher divides the population in to PG, Graduates and 10+2 students and using the random digit table he selects some of them from each. This is technically called

- (a) Stratified sampling
- (b) Stratified random sampling
- (c) Representative sampling
- (d) Non of the above

Q. 15 The intellectual development imparts

- (a) Emotional social development
- (b) Language development
- (c) Physical growth
- (d) All of the above

Q. 16 Generalized conclusion on the basis of a sample is technically known as

- (a) Statistical inference of external validity of the research
- (b) Parameter inference
- (c) Data analysis and interpretation
- (d) All of the above

Q. 17 Water consists of hydrogen and oxygen by weight in the ratio

- (a) 1 : 16
- (b) 2 : 16
- (c) 1 : 2
- (d) 2 : 1

Q. 18 The validity and reliability of a research will be at stake when

- (a) the incident was reported after a long period of time from that of its occurrence
- (b) the author who is the source of information is biased, incompetent or dishonest
- (c) Researcher himself is not competent enough to draw logical conclusion
- (d) All of above

Q. 19 Which of the following is considered to be a preservative of glucose

- (a) EDTA
- (b) Citrate
- (c) Sodium fluoride
- (d) Non of the above

Q. 20 To anticoagulate 1.0 ml of blood the quantity of heparin required is

- (a) Aprox. 10 units
- (b) Aprox. 20 units
- (c) Aprox. 50 units
- (d) None of the above

Q. 21 What is the function of epithelial tissue

- (a) Protection
- (b) Secretion
- (c) Both above
- (d) Connection

Q. 22 In which type of muscle cell, there is transverse dark (anisotropic) A-band and light (Isotropic) I-band

- (a) Voluntary muscle cell
- (b) Involuntary muscle cell
- (c) Heart muscle cell
- (d) All options

Q. 23 The function of Ribosomes is

- (a) DNA synthesis
- (b) RNA Synthesis
- (c) Protein synthesis
- (d) None of the above

Q. 24 What is the normal average capillary pressure at the venous end

- (a) 12 mm Hg
- (b) 32 mm Hg
- (c) 42 mm Hg
- (d) 62 mm Hg

Q. 25 Tissue fluid which is carried by lymphatic vessel is known as

- (a) Blood
- (b) CSF
- (c) Pleural fluid
- (d) Lymph

Q. 26 Oesophagus is the part of

- (a) Respiratory system
- (b) Skeletal system
- (c) Digestive system
- (d) All above

Q. 27 The volume of blood passing through the organs in a given time is known as

- (a) Complemental volume
- (b) Mean volume flow
- (c) Tidal volume
- (d) Residual volume

Q. 28 Increase in pulse rate above normal range is known as

- (a) Bradycardia
- (b) Pulse altemans
- (c) Tachycardia
- (d) Pulse paradoxus

Q. 29 When the blood glucose level crosses its renal threshold then condition is called

- (a) Glucosuria
- (b) Alimentary glycosuria
- (c) Alimentary glycosuria

(d) Hyperglycemic glycosuria

Q. 30 What is the function of Vitamin E

- (a) Helps in metabolism of amino acid
- (b) Helps in metabolism of muscles
- (c) Associated with Hb synthesis
- (d) Helps in prothrombin formation

Q. 31 Creatine phosphokinase is found mainly in

- (a) Brain
- (b) Cadiac muscle
- (c) Skeletal muscle
- (d) All options

Q. 32 What is the normal range of Lactate dehydrogenase

- (a) 600-800 IU /L
- (b) 1000-1200IU/L
- (c) 95-300 IU /L
- (d) 200-400 IU /L

Q. 33 Which enzyme is concerned with amino acid metabolism

- (a) Aspartate aminotransferase
- (b) Alanine aminotransferase
- (c) Both 1 & 2
- (d) Alpha-Glutamyl transferase

Q. 34 Which of the following is the inactive form of enzyme?

- (a) Proenzyme
- (b) Zymogen
- (c) Both 1 & 2
- (d) None option

Q. 35 An abnormal process which produce acidaemia is called

- (a) Acidysis
- (b) Acidolysis
- (c) Acidosis
- (d) None option

Q. 36 In metabolic alkalosis..... is very high

- (a) Blood pH
- (b) Plasma bicarbonate
- (c) PCO₂

(d) P02

Q. 37 Which filter is used for estimation of serum inorganic phosphate?

- (a) Blue filter
- (b) Red filter
- (c) Green filter
- (d) Yellow filter

Q. 38 What is percentage of phospholipid in HDL?

- (a) 9%
- (b) 20%
- (c) 18%
- (d) 24%

Q. 39 The level of triglycerides & total cholesterol is increased in

- (a) Liver disease
- (b) Hypothyroidism
- (c) Nephrotic syndrome
- (d) All above

Q. 40 What is the normal range of pH in whole blood (arterial)?

- (a) 5.24-6.32
- (b) 6.43-7.23
- (c) 7.37-7.45
- (d) 9.12-9.85

Q. 41 Microorganisms which are harmful for their host is known as

- (a) Commensals
- (b) Pathogenic
- (c) Vectors
- (d) None

Q. 42 In 1866, a third kingdom of living organism, Protista was established by

- (a) Robert Koch
- (b) Haeckel
- (c) Hansen
- (d) Louis Pasteur

Q. 43 Which Manual is mostly used for International publication?

- (a) Vergey's Manual
- (b) Lergey's Manual
- (c) Bergey's Manual

(d) Sergey's Manual

Q. 44 When an organism remains unstained against a stained background then that stain is known as

- (a) Indirect staining
- (b) Negative staining
- (c) Capsule staining
- (d) Polychromatic staining

Q. 45 Which species of Mycobacterium resist decolourisation with 5% sulphuric acid?

- (a) M. bovis
- (b) M. avium
- (c) M. phlei
- (d) M. Laprae

Q. 46 The cocci arranged in groups of four are called

- (a) Diplococci
- (b) Sarcina
- (c) Neisseria
- (d) Tetrads

Q. 47 Enclosed viscid layer around the bacterial cell wall is known as

- (a) Spore
- (b) Capsule
- (c) Flagella
- (d) Plasma layer

Q. 48 In bacterial cell which is the principal site of respiratory enzymes

- (a) Ribosomes
- (b) Mitochondria
- (c) Mesosomes
- (d) Golgi apparatus

Q. 49 The complement is a set of

- (a) 10 proteins
- (b) 20 proteins
- (c) 30 proteins
- (d) None of the above

Q. 50 Gluteraldehyde is used for disinfection of

- (a) Hospital Air
- (b) Medical Instruments
- (c) Water supply

- (d) All above
- Q. 51 Middle brook 7H 9 broth is used for the isolation of
- (a) M. tuberculosis
 - (b) M. Laprae
 - (c) Staphylococcus albus
 - (d) Staphylococcus epidermidis
- Q. 52 Swarming growth is seen in which Gram positive bacilli
- (a) Cl. welchi
 - (b) Cl. tetani
 - (c) Proteus
 - (d) Staphylococcus
- Q. 53 Satellitism is seen in culture of
- (a) Streptococcus
 - (b) E. coli
 - (c) Hemophilus
 - (d) All of above
- Q. 54 The small extra chromosomal genetic elements hosted by many bacteria is known as
- (a) Conjugation
 - (b) Plasmids
 - (c) Genes
 - (d) Chromosomes
- Q. 55 Epidemic typhus, scrub typhus & rocky mountain spotted fever is caused by which
- (a) Rickettsia
 - (b) Coxiella
 - (c) Mycoplasma
 - (d) Bartonella
- Q. 56 Those parasite who take food from host but does not infect host during this time is called
- (a) Ectoparasite
 - (b) Endoparasite
 - (c) Pathogen
 - (d) Commensal
- Q. 57 The causative organism of Mycetoma is
- (a) Staphylococcus
 - (b) Streptococcus
 - (c) Dermatophyte
 - (d) Nocardia
- Q. 58 Which fixative preserves protozoan cysts, helminth eggs and larvae for long periods?
- (a) Sodium acetate formalin
 - (b) 10% formal saline
 - (c) Gluteraldehyde
 - (d) Nitric acid
- Q. 59 In blood film of Malarial Parasite, Gametocyte is of which shape
- (a) Crescent or round
 - (b) Oval or elliptical
 - (c) Both 1 & 2
 - (d) Rectangular shaped
- Q. 60 Viral hemagglutination was originally observed with which type of virus
- (a) Adenovirus
 - (b) Poliovirus
 - (c) Influenza virus
 - (d) Enterovirus
- Q. 61 Epstein-Barr virus causes
- (a) Carcinoma
 - (b) Dermatitis
 - (c) Infectious mononucleosis
 - (d) Conjunctivitis
- Q. 62 Which Togaviridae causes an acute febrile illness with rash and lymphadenopathy?
- (a) Rubella virus
 - (b) Semliki forest virus
 - (c) Arboviruses
 - (d) Sinbis virus
- Q. 63 Mycobacterium tuberculosis is
- (a) Strict aerobe
 - (b) Gram negative
 - (c) Curved rod
 - (d) All above

Q. 64 Vaccine for Rabbits was first

developed by

- (a) Louis Pasteur
- (b) Robert Koch
- (c) Edward Jenner
- (d) Landsteiner

Q. 65 The molecules that promote phagocytosis by coating the particles is known as

- (a) Lysins
- (b) Opsonins
- (c) Precipitins
- (d) Mast cell

Q. 66 Which of the following is the antigen-antibody reaction?

- (a) Agglutination
- (b) Flocculation
- (c) Precipitation
- (d) All above

Q. 67 Which component is used for preparation of gel in immunodiffusion?

- (a) Agar
- (b) Polyacrylamide
- (c) Agrose
- (d) All above

Q. 68 Griffith's experiment proved

- (a) Conjugation
- (b) Transformation
- (c) Transduction
- (d) Transposon

Q. 69 Plasmids are responsible for

- (a) Cell metabolism
- (b) Cell division
- (c) Cell respiration
- (d) Gene transfer

Q. 70 Transduction is

- (a) Transfer of a portion of DNA
- (b) Inhibition of protein synthesis
- (c) Division of cell mass
- (d) Nucleolar inhibition

Q. 71 Most drug resistance occur due to

- (a) Transduction
- (b) Translation
- (c) Mutation
- (d) Conjugation

Q. 72 Refractive Index of Cedar oil used for oil immersion objective lens is about

- (a) 1.46
- (b) 1.52
- (c) 1.54
- (d) 1.58

Q. 73 Prions consist of

- (a) DNA
- (b) RNA
- (c) DNA & RNA
- (d) Only proteins

Q. 74 Specific proteins which carry the haemoglobin in plasma is known as

- (a) Hepatoglobulin
- (b) Spectroglobulin
- (c) Hemopexin
- (d) All above

Q. 75 Cytoplasmic granules of which cell is both acidophilic as well as basophilic

- (a) Neutrophil
- (b) Basophil
- (c) Eosinophil
- (d) All above

Q. 76 Which blood group is considered as universal donor

- (a) 'A'
- (b) 'B'
- (c) 'AB'
- (d) 'O'

Q. 77 Gluteraldehyde fixative is stable for several weeks at which temperature

- (a) 10⁰C
- (b) 8⁰C
- (c) 1⁰C
- (d) 4⁰C

Q. 78 Process of liquefaction of blood clot by proteolytic enzymes in plasma is known as

- (a) Hemolysis
- (b) Fibrinolysis
- (c) Hemostasis
- (d) Homeostasis

Q. 79 After many transfusion antibodies develop against donor white cells are called

- (a) Cold agglutinins
- (b) Complement
- (c) Leukoagglutinins
- (d) Precipitins

Q. 80 Most commonly performed test for the serodiagnosis of Syphilis is

- (a) TPHA
- (b) Wasserman
- (c) TPI
- (d) VDRL

Q. 81 Microscopic study of abnormal tissue of the body is known as

- (a) Histopathology
- (b) Histology
- (c) Exfoliative cytology
- (d) None of above

Q. 82 The granules present in Endoplasmic reticulum is known as

- (a) Lysosomes
- (b) Mesosomes
- (c) Ribosomes
- (d) All options

Q. 83 Golgi apparatus react with

- (a) Silver salts
- (b) Osmium tetraoxide
- (c) Both 1 & 2
- (d) None option

Q. 84 Acetic acid destroys which component of cell

- (a) Mitochondria
- (b) Golgi apparatus
- (c) Lysosomes
- (d) All above

Q. 85 In the process of oxidation, haematoxylin losses how many hydrogen atoms

- (a) One
- (b) Two
- (c) Three
- (d) Four

Q. 86 Which of the following is a cytological fixative

- (a) Flemming's fluid
- (b) Carnoy's fluid
- (c) Both A & B
- (d) Non of the above

Q. 87 What should be the thickness of block in frozen section technique?

- (a) 1 mm
- (b) 3 mm
- (c) 5 mm
- (d) 7 mm

Q. 88 Which special stain is used for the demonstration of Calcium salts in tissue?

- (a) Von Kossa's Method
- (b) Alizarin red S
- (c) Both 1 & 2
- (d) Schmorl's method

Q. 89 Which fixative is used in frozen section technique?

- (a) 10% formalin
- (b) Formal-alcohol
- (c) Both 1 & 2
- (d) Mercuric chloride

Q. 90 Exfoliative cytology is used in the early detection of

- (a) Cancer
- (b) Hyperplasia
- (c) Both 1 & 2
- (d) None option