



**VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM**  
**(Deemed to be University under section 3 of the UGC Act 1956)**

**Ph.D Entrance Test – November– 2025**

**Faculty of Medicine / Biochemistry**

**Instructions / Note:**

1. Answer all the questions. Each question carries one mark.
2. No negative marks for wrong answers.
3. Read each question carefully and answer in the OMR sheet provided for each question with only blue/ black pen to fill the circles in the OMR Sheet.
4. Question number 1 - 35 questions belong to Research Methodology component and Question number 36-70 questions belong to the subject at PG level
5. Return the question paper along with the OMR sheet.

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36. All of the following are functions of smooth Endoplasmic reticulum, EXCEPT \_\_\_\_\_
  - A. Synthesis of steroids
  - B. Detoxification of drugs
  - C. Folding of proteins
  - D. Lipid synthesis
37. Which of the following subcellular organelle is involved in destroying invading viruses and bacteria?
  - A. Peroxisomes
  - B. Lysosomes
  - C. Ribosomes
  - D. Microsomes
38. Which one of the following contains the largest quantity of extracellular material?
  - A. Striated muscle
  - B. Areolar tissue
  - C. Stratified epithelium
  - D. Myelinated nerve fibres
39. All the following are examples of homopolysaccharides EXCEPT \_\_\_\_\_
  - A. Starch
  - B. Glycogen
  - C. Agar
  - D. Cellulose



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40. Fluoride inhibits the following enzyme in glycolysis \_\_\_\_\_
- A. Aldolase
  - B. Enolase
  - C. Hexokinase
  - D. Phospho fructo kinase
41. Which of the following is a cardioprotective fatty acid?
- A. Palmitic acid
  - B. Stearic acid
  - C. Oleic acid
  - D. Linolenic acid
42. Lipoprotein(a) is structurally similar to \_\_\_\_\_
- A. Plasminogen
  - B. Fibrinogen
  - C. Prothrombin
  - D. Thromboplastin
43. A 45-year-old male is admitted with discomfort and chest pain that radiates to the left shoulder. ECG changes showed an ST-segment elevation. A sample of blood was drawn and sent to the laboratory to confirm the diagnosis of a myocardial infarction. Choose the enzyme/protein most likely to be elevated in the blood of the subject
- A. Creatine Kinase MB
  - B. Alanine Transaminase
  - C. Lipase
  - D. Amylase
44. The Michaelis constant ( $k_m$ ) indicates \_\_\_\_\_
- A. Affinity of enzyme to substrate
  - B. Affinity of substrate to product
  - C. Affinity of enzyme to product
  - D. Affinity of enzyme to inhibitor
45. The toxic effects of methanol are due to the formation of \_\_\_\_\_
- A. Acetic acid
  - B. Formic acid
  - C. Acetaldehyde
  - D. Alcohol
46. Which of the following processes do not require calcium?
- A. Coagulation
  - B. Neuromuscular transmission
  - C. Intracellular messenger
  - D. Absorption of iron



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47. In hypoparathyroidism \_\_\_\_\_
- A. Plasma calcium and inorganic phosphorous are low
  - B. Plasma calcium and inorganic phosphorous are high
  - C. Plasma calcium is low and inorganic phosphorous high
  - D. Plasma calcium is high and inorganic phosphorous low
48. Which of the following is NOT a Copper containing protein?
- A. Carbonic Anhydrase
  - B. Tyrosinase
  - C. ALA Synthase
  - D. Superoxide dismutase
49. Deficiency of one of the following trace elements causes loss of taste sensation?
- A. Copper
  - B. Selenium
  - C. Iron
  - D. Zinc
50. The SDA is the highest for the following nutrient \_\_\_\_\_
- A. Proteins
  - B. Fats
  - C. Carbohydrates
  - D. Vitamins
51. Which of the following statements about dietary fibers is a disadvantage of consuming them?
- A. Fiber helps lower the risk of colonic cancer
  - B. Fiber lowers serum cholesterol levels
  - C. Promotes the normal motility of the gut and prevents constipation
  - D. Lowers absorption of minerals
52. Following are limiting aminoacids in rice?
- A. Tryptophan, Phenylalanine
  - B. Tryptophan, Lysine
  - C. Lysine, Threonine
  - D. Cystine, Methionine
53. The predominant cation of plasma is \_\_\_\_\_
- A. Sodium
  - B. Potassium
  - C. Calcium
  - D. Magnesium



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54. All of the following are essential amino acids EXCEPT \_\_\_\_\_
- A. Tyrosine
  - B. Lysine
  - C. Arginine
  - D. Tryptophan
55. All the following are products formed from cholesterol EXCEPT \_\_\_\_\_
- A. Bile salts
  - B. Steroid hormones
  - C. Bilirubin
  - D. Vitamin D
56. DNA finger printing is based on the presence in DNA of \_\_\_\_\_
- A. Constant number of tandem repeats
  - B. Variable number of tandem repeats
  - C. Non-repetitive sequences in each DNA
  - D. Introns in eukaryotic DNA
57. The plasmid pBR322 has \_\_\_\_\_
- A. Ampicillin resistance gene
  - B. Tetracycline resistance gene
  - C. Both (A) and (B)
  - D. None of these
58. Name the class of immunoglobulin which has a pentameric structure?
- A. IgE
  - B. IgG
  - C. IgA
  - D. IgM
59. Porphyrin is formed by joining pyrrole ring by \_\_\_\_\_
- A. Methylene bridge
  - B. Hydrogen bond
  - C. Phosphate bond
  - D. Glycosidic bond
60. Transplacental transfer of maternal IgG antibodies induces \_\_\_\_\_
- A. Active natural immunity
  - B. Active artificial immunity
  - C. Passive natural immunity
  - D. Passive artificial immunity
61. The beta subunit of Prokaryotic RNA polymerase \_\_\_\_\_
- A. Determine the DNA to be transcribed
  - B. Catalyzes polymerization
  - C. Recognizes the promoter for initiation of transcription
  - D. Maintains the conformation of rho subunit



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62. Lac Operon transcription is inhibited by, except \_\_\_\_\_
- A. Glucose
  - B. Glucose with inducer
  - C. Inducer without glucose
  - D. Both lactose and glucose
63. DNA staining is done by \_\_\_\_\_
- A. Crystal violet
  - B. Methylene Blue
  - C. Ethidium bromide
  - D. Giemsa staining
64. All of the following are characteristics of Tumour EXCEPT \_\_\_\_\_
- A. Loss of contact inhibition
  - B. Loss of apoptosis
  - C. Sensitive to anti-growth signals
  - D. Stimulate local angiogenesis
65. Bhopal gas tragedy is due to leakage of \_\_\_\_\_
- A. Metahne
  - B. Isocyanate
  - C. Carbon monoxide
  - D. Sulfur oxide
66. The most important natural antioxidant is \_\_\_\_\_
- A. Vitamin A
  - B. Vitamin E
  - C. Vitamin E
  - D. Vitamin D
67. All are phase I reactions of detoxification EXCEPT \_\_\_\_\_
- A. Conjugation
  - B. Oxidation
  - C. Reduction
  - D. Hydrolysis
68. The following are the characteristics of free radicals EXCEPT \_\_\_\_\_
- A. Highly reactive
  - B. Short half life
  - C. Cytotoxic
  - D. Not produced during normal metabolism



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69. All of the following are pre-analytical errors EXCEPT \_\_\_\_\_
- A. Improperly labelled container
  - B. Misidentification of patient
  - C. Equipment malfunction
  - D. Insufficient sample
70. Which of the following is used as a label in ELISA?
- A. Antibody
  - B. Antigen
  - C. Enzyme
  - D. Radioisotope

