



GSFC
UNIVERSITY
EDUCATION RE-ENVISIONED

GSFC UNIVERSITY

SCHOOL OF SCIENCE

Admission Common Test for M.Sc. Biotechnology, 2021-22

Time: 60 Minutes

Total Marks: 60

Instructions:

- i. All questions are compulsory.
 - ii. All questions are Multiple Choice Questions.
 - iii. Each question Carries 1 Mark.
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1. Air bubble in water behaves as
 - a. sometimes concave, sometimes convex lens
 - b. concave lens
 - c. convex lens
 - d. always refracting surface
2. The phenomenon that cannot take place in sound waves is
 - a. Reflection
 - b. Interference
 - c. Diffraction
 - d. Polarization
3. When A ball is thrown upward in a moving train does not come back into the thrower's hand.
 - a. True
 - b. False
4. Which of the following is true about the universe?
 - a. It's an open system
 - b. It's a closed system
 - c. It is an isolated system
 - d. It is an international system
5. Which are the charged species of an atom?



- a. H_2/Ni Electron only
 - b. Neutron only
 - c. Electron and proton
 - d. Proton and neutron
6. A coin is tossed five times in succession. What is the probability of getting at least four heads?
- a. 1-4
 - b. 3-4
 - c. 1-16
 - d. 3-16
7. The perimeter of triangle ABC is 6 times the arithmetic mean of sines of its angles, if $a = 1$ then $A =$ _____
- a. $\pi/6$
 - b. $\pi/3$
 - c. $\pi/2$
 - d. $\pi/5$
8. The maximum value of $\sin x$ is
- a. 1
 - b. 0.8
 - c. 0
 - d. 0.6
9. What is the median of the sample 5, 5, 11, 9, 8, 5, 8?
- a. 5
 - b. 6
 - c. 8
 - d. 9
10. Differential Equation used widely in the fields of Economics, Ecology and Physics
- a. True
 - b. False
11. The exchange of gases in the alveoli of the lungs takes place by
- a. Active transport
 - b. Simple diffusion
 - c. Passive transport
 - d. None of the above
12. Colchicine is a cell poison which arrests cell division at



- a. Metaphase
 - b. Anaphase
 - c. Telophase
 - d. Prophase
13. Which phase occupies the maximum part of cell cycle?
- a. Mitotic phase
 - b. Meiotic phase
 - c. Cytokinesis
 - d. Interphase
14. The proteinaceous molecule that joins a non-protein prosthetic group to form a functional enzyme, is called
- a. Apoenzyme
 - b. co-factor
 - c. Holoenzyme
 - d. Isoenzyme
15. Which one of the following structures between two adjacent cells is an effective transport pathway?
- a. Plasmalemma
 - b. Plasmodesmata
 - c. Plastoquinones
 - d. Endoplasmic reticulum
16. Out of the following which one is an example of emulsion? methane
- a. Soap solution
 - b. Milk
 - c. Blood
 - d. Air
17. A metal present in insulin is
- a. Zinc
 - b. Copper
 - c. Iron
 - d. Aluminium



18. The ozone layer forms naturally by the interaction of
- CFC with oxygen
 - UV radiation with oxygen
 - IR radiation with oxygen
 - Oxygen and water vapour
19. Nucleic acids are the polymers of _____
- Nucleosides
 - Bases
 - Sugars
 - Nucleotides
20. The products of the fermentation of sugar are ethanol and
- Water
 - Carbon dioxide
 - Oxygen
 - Sulfuroxide
21. All viruses consists of
- RNA and protein coat
 - DNA and protein coat
 - a nucleic acid and a protein coat
 - Polysaccharides and proteins
22. Which of the following Process in which using natural bacteria in mining?
- Bioremediation
 - Bioleaching
 - Biodegradation
 - Genomics
23. Starvation proteins are produced by a culture during which of the following segments of the growth curve?
- Lag phase
 - Log phase
 - Stationary phase



- d. Death Phase
24. DNA replication is
- Conservative
 - Semiconservative
 - Non-conservative
 - Constitutive
25. Ribosomes are _____
- Cell organelle
 - Enzyme
 - Nucleotides
 - Nucleosides
26. The first transgenic crop was
- Cotton
 - Tobacco
 - Brinjal
 - Banana
27. A common biocontrol agent for the control of plant disease is
- Baculovirus
 - Bacillus thuringiensis*
 - Glomus*
 - Trichoderma*
28. Which of the following is not a variant of BLAST?
- BLASTN
 - BLASTP
 - BLASTX
 - TBLASTNX
29. Program used for 3-D structure visualization
- UPGMA
 - CLUSTAL
 - RasMol



- d. SWISS-PROT
30. Phylogenetic relationship can be shown by
- Dendrogram
 - Genebank
 - Data retrieving tool
 - Data search tool
31. Applications of bioinformatics include
- data storage and management
 - drug designing
 - understand relationships between organisms
 - all of the above
32. All are sequence alignment tools except
- BLAST
 - FASTA
 - RasMol
 - CLUSTAL W
33. In studying protein X-ray diffraction is used to
- concentrate the protein
 - determining the structure of protein
 - determine sedimentation coefficient
 - none of these
34. The full form of MALDI is
- Mass Assisted Laser Desorption Ionization
 - Matrix Assisted Laser Desorption Ionization
 - Mono Anionic Laser Desorption Ionization
 - None of these
35. DNA-dependent RNA polymerase catalyses transcription on one strand of the DNA which is called the
- Template strand
 - coding strand



- c. alpha strand
 - d. Antistrand
36. A complex of ribosomes attached to a single strand of RNA is known as
- a. Polypeptide
 - b. Okazaki fragment
 - c. Polysome
 - d. Polymer
37. Which of the following does not follow central dogma of molecular biology?
- a. Fungi
 - b. Algae
 - c. Animal cell
 - d. HIV
38. Crop engineered for glyphosate are resistant/tolarant to
- a. Insects
 - b. Herbicides
 - c. Fungi
 - d. Bacteria
39. Ethanol is commonly produced through a particular species of
- a. Saccharomyces
 - b. Clostridium
 - c. Trichoderma
 - d. Aspergillus
40. Which of the following is the exception of cell theory?
- a. Virus
 - b. Plant
 - c. Animal
 - d. Lichen
41. Melanin protects from
- a. UV rays
 - b. Visible rays



- c. Infrared rays
- d. X-rays
42. What is common between parrot, platypus and kangaroo?
- a. Toothless jaw
- b. Functional post-anal tail
- c. Ovoparity
- d. Homoiothermy
43. In mammals, histamines are secreted by
- a. Lymphocytes
- b. Mast cells
- c. Fibrioblasts
- d. Histiocytes
44. Probiotics are
- a. Cancer enhancing microbes
- b. New kind of food allergens
- c. Live microbial food supplements
- d. Safe antibiotics
45. Which of the following organisms begins marine food chain?
- a. Zooplankton
- b. Small fish
- c. Phytoplanktons
- d. Corals
46. In hybridization, $Tt \times tt$ gives rise to the progeny of ratio
- a. 2:1
- b. 1:2:1
- c. 1:1
- d. 1:2
47. When a tall and red flowered individual is crossed with a dwarf and white flowered individual, phenotype in the progeny is dwarf and white. What will be genotype of tall and red flowered individual?
- a. $TtRr$



- b. TTRR
 - c. TTRr
 - d. TtRR
48. Gene which suppresses other gene's activity but does not lie on the same locus is called as
- a. Supplementary
 - b. Epistasis
 - c. Hypostatic
 - d. Co-dominance
49. Law of independent assortment can be explained with the help of
- a. Dihybrid cross
 - b. Test cross
 - c. Backcross
 - d. Monohybrid cross
50. Barr body is missing in the female suffering from
- a. Hauntington's disease
 - b. Tay-sach's disease
 - c. Klinefelter's syndrome
 - d. Turner's syndrome
51. Wound healing in plants is initiated by
- a. Apical meristem
 - b. Lateral meristem
 - c. Secondary meristem
 - d. Intercalary meristem
52. Which of the following flowers only once in life time?
- a. Bamboo species
 - b. Mango
 - c. Papaya
 - d. Jackfruit
53. Which one of the following fruit is parthenocarpic



- a. Jackfruit
 - b. Banana
 - c. Brinjal
 - d. Apple
54. Transport of food materials in higher plants occurs through
- a. Sieve elements
 - b. Xylem
 - c. Trachieds
 - d. Companinon cells
55. The waxy substance associated with the wall of the cork cell is
- a. Lignin
 - b. Hemicellulose
 - c. Cutin
 - d. Suberin
56. Archaeobacteria differ from bacteria in
- a. lacking peptidoglycan in the cell wall
 - b. lacking membrane bound organelles
 - c. containing circular chromosome
 - d. containing formyl-methionine as an initiator amino acid
57. Which one of the following statements is INCORRECT with respect to bacterial conjugation?
- a. It facilitates transfer of genetic material
 - b. It requires flagellum
 - c. It can spread antibiotic resistance
 - d. It can transfer virulence factors
58. One of Koch's postulates states that the suspected causative organism should
- a. not grow in artificial media
 - b. get cleared by the host immune system
 - c. always be associated with other organisms and hence cannot be grown as pure culture
 - d. be grown in pure culture



59. In a simple microscope, _____
- a lens with negative power is used
 - the focal length of the lens is less than the least distance for clear vision
 - the focal length of the lens is greater than the least distance for clear vision
 - magnification depends only on the focal length of the lens
60. Halotolerant and halophilic organisms can be isolated from
- Sea
 - River
 - Pond
 - Lake

SAMPLE QUESTION PAPER