

*Answer all the questions. Each question is provided with four alternative responses. Select the correct one from the letter choices (a,b,c,d) and bubble your choice in the OMR Sheet. ( 1x100 = 100 Marks)*

**1. An animal viral vector**

- |         |           |
|---------|-----------|
| a) CMV  | b) TMV    |
| c) SV40 | d) Gemini |
- 

**2. Which one is a cryoprotectant**

- |         |                    |
|---------|--------------------|
| a) DMSO | b) sodium chloride |
| c) EDTA | d) sucrose         |
- 

**3. Which among is Pencillin resistant microorganism**

- |                  |                   |
|------------------|-------------------|
| a) Mycoplasma    | b) Staphylococcus |
| c) Mycobacterium | d) Ecoli          |
- 

**4. Mesophile has growth optimum at**

- |              |            |
|--------------|------------|
| a) 20 - 45°C | b) 0-15°C  |
| c) 55 - 65°C | d) 20-30°C |
- 

**5. A culture started with 4 cells and ended with 128 cells. How many generations did the cells go through:**

- |       |       |
|-------|-------|
| a) 64 | b) 32 |
| c) 5  | d) 4  |
- 

**6. Which organism is coming under GRAS status**

- |                  |                |
|------------------|----------------|
| a) E.coli        | b) pseudomonas |
| c) Lactobacillus | d) Bacillus    |
-

**7. An algal biofertilizer**

- a) Chlorella
  - b) Plectonema
  - c) Azotobacter
  - d) Azospirillum
- 

**8. An example of sedimentary type of nutrient cycle is**

- a) Nitrogen cycle
  - b) Carbon cycle
  - c) Phosphorous cycle
  - d) All of the above
- 

**9. Which one is biopreservative**

- a) Acetic acid
  - b) Sulphuric acid
  - c) Nitric acid
  - d) Hydrochloric acid
- 

**10. Who introduced vaccination?**

- a) Pasture
  - b) Koch
  - c) Edward Jenner
  - d) Alexander Fleming
- 

**11. Key feature of innate immunity**

- a) Specific
  - b) In born
  - c) Unstable
  - d) Acquired
- 

**12. In considering diffusion of ions through an ion channel, which driving force (s) must be considered?**

- a) The ion concentration gradient
  - b) The electrical gradient
  - c) Facilitated diffusion
  - d) both a and b
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**13. Which of the following intracellular or plasma membrane proteins require  $\text{Ca}^{2+}$  for full activity?**

- a) Calmodulin
  - b) JAK kinase
  - c) protein kinase A
  - d) guanylyl cyclase
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**14. What region of the brain contains the primary visual cortex?**

- a) the occipital lobe
  - b) the frontal lobe
  - c) the temporal lobe
  - d) the somatosensory cortex
- 

**15. Antidepressant medications most commonly target which neurotransmitter?**

- a) acetylcholine
  - b) dopamine
  - c) histamine
  - d) serotonin
- 

**16. When a muscle fibre undergoes an isotonic contraction:**

- a) M lines remain the same distance apart
  - b) Z lines move closer to the ends of the A bands
  - c) A bands become shorter
  - d) I bands become wider
- 

**17. When a person engages in strenuous exercise**

- a) blood flow to the kidneys is reduced
  - b) cardiac output is reduced
  - c) total peripheral resistance increases
  - d) systolic arterial blood pressure is reduced
- 

**18. Which of the following is not true about asthma?**

- a) the basic defect is chronic airway inflammation
  - b) it is always caused by an allergy
  - c) the airway smooth muscle is hyperresponsive
  - d) it can be treated with inhaled steroid therapy
-



19. An increase in rennin is caused by

- a) a decrease in sodium intake
- b) a decrease in renal sympathetic nerve activity
- c) an increase in blood pressure in the renal artery
- d) an aldosterone-secreting adrenal tumour

20. Which of the following will not lead to a diuresis?

- a) excessive sweating
- b) central diabetic insipidus
- c) nephrogenic diabetes insipidus
- d) excessive water intake

21. Which component of bile is not primarily by hepatocytes?

- a) bicarbonate
- b) bile salts
- c) cholesterol
- d) lecithin

22. Part of nucleic acid used to find a gene by hybridization is called

- a) vector
- b) clone
- c) probe
- d) cybrid

23. A segment of DNA that reads from the same forward and backward is called

- a) palindromic DNA
- b) complementary DNA
- c) plasmid DNA
- d) copy DNA

24. Which one of the following organism is used for the large scale production of recombinant insulin?

- a) Plasmodium
- b) Agrobacterium
- c) Rhizobium
- d) E.coli

**25. Haploid plants can be obtained through**

- a) meristem culture
  - b) embryo culture
  - c) endosperm culture
  - d) pollen culture
- 

**26. Dolly, the first animal produced through cloning is**

- a) camel
  - b) rat
  - c) cow
  - d) sheep
- 

**27. The resolving power of light microscope is**

- a) 0.1 micron
  - b) 0.2 micron
  - c) 0.3 micron
  - d) 0.4 micron
- 

**28. DDT is which type of insecticide**

- a) Organophosphate
  - b) Organochlorine
  - c) Carbamate
  - d) None of these
- 

**29. In cryopreservation, cells are preserved in**

- a) Carbondioxide
  - b) Oxygen
  - c) Liquid nitrogen
  - d) Helium
- 

**30. Internet explorer is used for**

- a) Chating
  - b) Browsing
  - c) Videoconferencing
  - d) Networking
-

31. None digestable carbohydrate is

- a) Cellulose
  - b) Lactose
  - c) Starch
  - d) Sucrose
- 

32. The process of removal of stamen from flower during hybridization is called

- a) Grafting
  - b) Emasculation
  - c) Sterilization
  - d) Crossing
- 

33. All cells of an earthworm have the following components except

- a) mitochondria
  - b) nuclei.
  - c) plasma membranes
  - d) cell walls
- 

34. Bacteriophages are

- a) bacteria that infect viruses
  - b) bacteria that are parasitic.
  - c) viruses that infect bacteria
  - d) viruses that are parasitic
- 

35. Which of the genetic diseases stated below is sex-linked?

- a) Cystic fibrosis
  - b) Haemophilia.
  - c) Hypercholesterolemia
  - d) Tay-Sachs disease
- 

36. Which of the following is not an arthropod?

- a) Butterfly
  - b) Crayfish
  - c) Earthworm
  - d) Spider
-



37. A mass of fungal filaments is called a

- a) colony
  - b) hyphae.
  - c) mycelium
  - d) mycorrhizae
- 

38. Radiant energy converted to potential energy by

- a) Consumers
  - b) Producers
  - c) Decomposers
  - d) All of these
- 

39. The odourless component of LPG

- a) Butane
  - b) Propane
  - c) Ethane
  - d) Ethyl mercaptan
- 

40. An algae which produce hydrogen gas

- a) Chlamydomonas
  - b) Chlorella
  - c) Spirogyra
  - d) Spirulina
- 

41. The 1<sup>st</sup> World Climate Conference held in

- a) Geneva
  - b) London
  - c) Vienna
  - d) Paris
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42. The term ecosystem was proposed by

- a) Carl Mobino
  - b) A.Tansley
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**43. Chemical nature of agar**

a) Carbohydrate

b) Lipid

c) Polysaccharide

d) Protein

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**44. Edible vaccine for foot & mouth disease**

a) Banana

b) Tomato

c) Potato

d) Sugar beet

---

**45. The disease that affects many people at different countries is termed**

a) Pandemic

b) Sporadic

c) Epidemic

d) Endemic

---

**46. Which among is not a natural environment**

a) Wild life

b) Land

c) Dam

d) Radiation

---

**47. Mesosphere extends an altitude of**

a) 11 km

b) 500km

c) 50km

d) 90km

---

**48. Who proposed coupling & repulsion hypothesis**

a) Bateson & Punnett

b) Mendel

c) Morgan

d) Sutton

---

49. Height of man is an example of

- a) Monogenic inheritance
  - b) Polygenic inheritance
  - c) Diplogenic inheritance
  - d) None of these
- 

50. In which organism environment controll sex determination

- a) Rotifera
  - b) Honey bee
  - c) Drosophilla
  - d) Grass hoper
- 

51. Anther culture is mostly practised in

- a) Water melon
  - b) Sugarcane
  - c) Rice
  - d) Wheat
- 

52. The plant cells are

- a) Totipotet
  - b) Omnipotent
  - c) Pleuripotent
  - d) None of the above
- 

53. Which among the following is not an auxin

- a) NAA
  - b) IBA
  - c) 2,4,D
  - d) TDZ
- 

54. Which among the following is a Type II restriction endonuclease

- a) *EcoP1*
  - b) *EcoR1*
  - c) *EcoB*
  - d) *EcoK*
-

55. Which is the cofactor of T4 DNA ligase

- a) NAD
  - b) SAM
  - c)  $Mg^{2++}$
  - d) ATP
- 

56. Klenow fragment is found in

- a) DNA pol II
  - b) DNA pol I
  - c) DNA pol III
  - d) none of the above
- 

57. Which among the following is not a thermostable polymerase

- a) DNA pol III
  - b) Vent pol
  - c) *Tth* pol
  - d) *Pfu* pol
- 

58. Hybridoma are selected in

- a) XAT medium
  - b) HAT medium
  - c) YEB medium
  - d) LB medium
- 

59. Plaque lift is a

- a) Southern blot
  - b) Western blot
  - c) both a and b
  - d) either a or b
- 

60. Alpha complementation is not the feature of

- a) pUC vectors
  - b) pBR vectors
  - c) pbluescript vectors
  - d) pLITMUS vectors
-



61. Which among the following can be used for obtaining the single stranded DNA of the cloned gene

- a) puc118
  - b) M13mp18
  - c) pGEM3Z
  - d) all of the above
- 

62. A sponge can be distinguished from other animals by the presence of .....

- a) Hollow body
  - b) Coelenteron
  - c) Choanocytes
  - d) dermal papillae
- 

63. Nematocysts are the specialized cells found in the members of the phylum.....

- a) Cnidaria
  - b) Porifera
  - c) Platyhelminthes
  - d) Annelida
- 

64. Platyhelminthes are best described as

- a) flatworms, triploblastic , acoelomate animals
  - b) flatworms, diploblastic , acoelomates
  - c) flatworms, triploblastic , coelomates
  - d) flatworms, triploblastic , pseudocoelomates animals
- 

65. The life span of Ascaris is .....

- a) 30 days
  - b) About an year
  - c) 6 months
  - d) 8-10 months
-

66. Annelids are advanced over nematodes in having .....

- a) Metameric segmentation
- b) True coelom
- c) Closed circulatory system
- d) all of the above

67. Pronounced cephalization is a characteristic feature of .....

- a) Echinoderms
- b) Annelida
- c) Arthropoda
- d) Platyhelminthes

68. Head, foot and visceral mass are characteristic features of .....

- a) Molluscs
- b) Annelids
- c) Echinoderms
- d) Arthropods

69. Which of the following system is found in Echinoderms?

- a) Respiratory system
- b) Excretory system
- c) Nervous system
- d) Internal skeletal system

70. The three germ layers , namely ectoderm, endoderm and mesoderm are found in

- a) All the chordates only
- b) All the chordates except the protochordates
- c) All the chordates and higher invertebrates
- d) Higher chordates and higher invertebrates

71. Persistence of larva traits is known as

- a) Neogenesis
- b) Paedogenesis
- c) Parthenogenesis
- d) Pedomorphosis

**72. Radial vascular bundles, limited in number, with multiseriately arranged exarch xylem vessels are found in .....**

- a) Angiosperms
  - b) Dicot Stems
  - c) Dicot roots
  - d) Monocot stems
- 

**73. Glandular leaves, adnate stipules, poly petalous flowers with superior ovary and Hesperidium fruits are found in .....**

- a) Rutaceae
  - b) Lamiaceae
  - c) Umbelliferae
  - d) Myrtaceae
- 

**74. Which among the following plant has NO pyrenoid in its chloroplasts?**

- a) Anabena
  - b) Spirogyra
  - c) Chlorella
  - d) Chlamydomonas
- 

**75. In which of the following plant sporophyte is seen growing erect as a sporangium on the gametophytic body?**

- a) Marchantia
  - b) Reboulia
  - c) Anthoceros
  - d) Riccardia
- 

**76. Which among the following living tissue is seen as the mechanically supporting tissue in the petiole of leaves?**

- a) Parenchyma
  - b) Collenchyma
  - c) Sclerenchyma
  - d) Aerenchyma
- 

**77. Which of the following plant follows Anemophilous pollination?**

- a) Leucas aspera
  - b) Adathoda beddomei
  - c) Terminalia arguna
  - d) Oryza sativa
-



78. Which of the following primates is most closely related to humans?

- a) Lemur
  - b) Macaque
  - c) Loris
  - d) Spider monkey
- 

79. Which of the following is an exotic plant in India

- a) Shorea robusta
  - b) Mangifera indica
  - c) Casuarina equisetifolia
  - d) Rauwolfia serpentine
- 

80. The evolutionary process most likely to account for the fixation of a neutral allele in small populations is:

- a) Selection
  - b) mutation
  - c) genetic drift
  - d) recombination
- 

81. A Species inhabiting different geographical area is known as

- a) sympatric
  - b) Allopatric
  - c) sibling
  - d) biospecies
- 

82. Lamark theory of organic evolution is usually known as

- a) Natural selection
  - b) Inheritance of Acquired characters
  - c) Genetic drift
  - d) Continuity of germplasm
- 

83. Synecology deals with

- a) Ecology of species
  - b) Ecology of many species
  - c) Ecology of community
  - d) all the above
-

**84. Red data book contain**

- a) All animal species
  - b) all plant species
  - c) Threatened species
  - d) Economically important species
- 

**85. First experiment regarding evolution of life was performed by**

- a) Watson and crick
  - b) Oparine and Haldane
  - c) Urey and Miller
  - d) Meselson and stahl
- 

**86. Which radiation has the highest wavelength?**

- a) microwave
  - b) gamma radiation
  - c) X-rays
  - d) radio waves
- 

**87. Alpha radiation is similar to that of**

- a) hydrogen nucleus
  - b) helium nucleus
  - c) nitrogen
  - d) none of these
- 

**88. In *trp* operon, tryptophan act as**

- a) inducer
  - b) corepressor
  - c) promoter
  - d) activator
- 

**89. Rho factor is related to which of the following process in transcription**

- a) Initiation
  - b) Elongation
  - c) Termination
  - d) Processing
-

90. Which type of chromatography depends on molecular size for their mode of separation

- a) paper chromatography
- b) absorption chromatography
- c) gel-filtration chromatography
- d) ion exchange chromatography

91. The state of disorder of a system is

- a) enthalpy
- b) entropy
- c) free energy
- d) none of these

92. An amino acid never found in alpha helix of proteins

- a) Glycerine
- b) Proline
- c) Serine
- d) Alanine

93. Which amino acid is responsible for the majority of near UV absorbance of protein at 280 nm

- a) Lysine
- b) Glycine
- c) Tryptophan
- d) Proline

94. Key feature of innate immunity

- a) Specific
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  - d) copy DNA
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