

Section 1 - M Sc - Microbiology or Botany or Zoology

1) The capsid of bacteriophage is made up of

- A) Phospholipids
  - B) DNA
  - C) Proteins
  - D) carbohydrate
- 

2) Life cycle of Obelia is termed as

- A) Neoteny
  - B) Polymorphism
  - C) Metagenesis
  - D) Alteration of generation
- 

3) Normal human body cells contain how many chromosomes?

- A) 44
  - B) 23
  - C) 58
  - D) 46
- 

4) Lipid bilayer is

- A) Neither A or B
- B) Both Hydrophilic and Hydrophobic
- C) Hydrophobic
- D) Hydrophilic

5) Bacteria with a cluster of polar flagella are called

- A) Monotrichous
  - B) Lophotrichous
  - C) Amphitrichous
  - D) Peritrichous
- 

6) Gliding motility enables bacteria to move

- A) none
  - B) Both
  - C) in liquid media
  - D) along solid surfaces
- 

7) Members of cephalochordata are

- A) Carnivorous
  - B) Predators
  - C) Mucous feeders
  - D) Filter feeders
- 

8) The protective covering over radicle during seed germination is:

- A) Epidermis
  - B) Coleoptile
  - C) Coleorrhiza
  - D) Suspensor
- 

9) Grafting is successful in dicots but not in monocots because the dicot have:

- A) Vascular bundles arranged in a ring
- B) Cork Cambium
- C) Cambium for secondary growth
- D) Vessels with elements arranged end to end

10) Transposable elements are also known as:

- A) Codons
  - B) Linear RNAs
  - C) Jumping genes
  - D) Junk DNA
- 

11) Which of the following is a polysaccharide?

- A) Sucrose
  - B) Lactose
  - C) Maltose
  - D) Glycogen
- 

12) Which hormone reduces transpiration rate by inducing stomatal closure?

- A) ABA
  - B) Ethylene
  - C) Cytokinin
  - D) Auxin
- 

13) The pigment fucoxanthin is found in which group of algae:

- A) Red Algae
  - B) Green algae
  - C) Blue green algae
  - D) Brown algae
- 

14) Citric acid is produced commercially by

- A) *Saccharomyces cerevisiae*
- B) *Rhizopus oryzae*
- C) *Aspergillus niger*
- D) *Ashbya gossypii*

15) Chief excretory waste of earthworm is

- A) Creatinine
  - B) Water
  - C) Urea
  - D) Ammonia
- 

16) Select the correct statement:

- A) Legumes fix nitrogen only by bacteria present in leaves
  - B) Legumes are incapable of fixing nitrogen
  - C) Legumes fix nitrogen through bacteria living in fruits
  - D) Legumes fix nitrogen only by bacteria present in root nodules
- 

17) Which of the following vitamins protect cells from the damaging effects of oxidation reduction reactions?

- A) Vitamin C
  - B) Vitamin E
  - C) Vitamin A
  - D) Vitamin B
- 

18) Trichocysts are found in

- A) Endoplasm of Paramecium
  - B) Ectoplasm of Paramecium
  - C) Ectoplasm of Euglena
  - D) Endoplasm of Euglena
- 

19) If the treatment of gibberellic acid is given to dwarf pea plant, it become tall. If these pea plants are crossed with pure tall pea plants, what will be the phenotypic ratio in F<sub>1</sub> generation?

- A) 75% tall and 25% dwarf plants
  - B) 50% tall and 50% dwarf plants
  - C) 100% tall plants
  - D) All dwarf plants
-

20) Name the type of bacteria which uses reduced inorganic substances as an electron source?

- A) Organotrophs
  - B) Lithotrophs
  - C) Autotrophs
  - D) Chemotrophs
- 

21) A flagellum is composed of

- A) filament
  - B) hook
  - C) basal body
  - D) all the above
- 

22) The function of chloroplasts is:

- A) cellular respiration
  - B) Photosynthesis
  - C) lipid synthesis.
  - D) protein synthesis
- 

23) Accumulation of non-biodegradable materials in the food chain

- A) Detoxification
  - B) Biomagnification
  - C) None of these
  - D) Both of these
- 

24) The correct sequence of various larvae of liverfluke is

- A) Miracidium, Sporocyst, Cercaria, Metacercaria, Redia
- B) Miracidium, Sporocyst, Redia, Cercaria, Metacercaria
- C) Cercaria, Sporocyst, Redia, Miracidium, Metacercaria
- D) Sporocyst, Redia, Miracidium, Cercaria

25) Mycology is the study of

- A) Algae
  - B) Bacteria
  - C) Fungi
  - D) Viruses
- 

26) As per the available fossil record, which one is the first vascular plant:

- A) Psilophytales
  - B) Horsetails
  - C) Cycads
  - D) Lycopsids
- 

27) For each molecule of ATP the  $\text{Na}^+$ -  $\text{K}^+$  pump transfers

- A) 3  $\text{Na}^+$  out and 2  $\text{K}^+$  in
  - B) 3  $\text{Na}^+$  in and 2  $\text{K}^+$  out
  - C) 2  $\text{Na}^+$  out and 3  $\text{K}^+$  in
  - D) 2  $\text{Na}^+$  in and 3  $\text{K}^+$  out
- 

28) The process in which various industrial products like alcohol, penicillin are produced is called

- A) Fermentation
  - B) Putrefaction
  - C) Synthesis
  - D) Degradation
- 

29) Maximum amount of water loss in plants occurs through:

- A) Transpiration
- B) Guttation
- C) Metabolism
- D) Photosynthesis

30) The association which involves the exchange of nutrients between two species is referred to as \_\_\_\_\_

- A) Antagonism
  - B) Mutualism
  - C) Syntrophism
  - D) Commensalism
- 

31) In angiosperm, triple fusion is necessary for the formation of:

- A) Pollen
  - B) Endosperm
  - C) Leaf
  - D) Embryo
- 

32) Which of the following is an example of saturated fatty acids ?

- A) Oleic acid
  - B) Lauric acid
  - C) Linoleic acid
  - D) Sucrose
- 

33) The end products of anaerobic respiration are:

- A) CO<sub>2</sub> and Ethanol
  - B) CO<sub>2</sub> and H<sub>2</sub>O
  - C) CO<sub>2</sub> and S
  - D) CO<sub>2</sub> and O<sub>2</sub>
- 

34) Rods, spheres and spirals are shapes of cells observed in:

- A) Plants
  - B) Animal Cell
  - C) Bacteria
  - D) Fungi
-

35) Phytoalexins aid in

- A) Photosynthesis
  - B) Respiration
  - C) Defense against pathogen
  - D) Plant growth
- 

36) Repeating units of hyaluronic acid are

- A) N-acetylglucosamine and galactose
  - B) N-acetylgalactosamine and D-glucuronic acid
  - C) N-acetyl galactosamine and L-iduronic acid
  - D) N acetylglucosamine and D-glucuronic acid
- 

37) For chlorophyll formation in plants elements needed are:

- A) Iron and Calcium
  - B) Calcium and Potassium
  - C) Iron and Magnesium
  - D) Sodium and Copper
- 

38) If DNA is linked to a ladder, what are the compounds that make up the sides of the ladder?

- A) Phosphate
  - B) phosphates and sugars
  - C) phosphates and bases
  - D) bases only
- 

39) What is true about all sponges without exception?

- A) They are all marine.
  - B) They have a mixed skeleton consisting of spicules and sponging fibres.
  - C) They reproduce only asexually by budding.
  - D) They have flagellated collar cells.
-

40) Respiration and photosynthesis are the key process of one of the following

- A) Phosphorous cycle
  - B) Sulphur cycle
  - C) Carbon cycle
  - D) Nitrogen cycle
- 

41) The synthesis of Auxin in plants starts from which amino acid:

- A) Tryptophan
  - B) Orinithine
  - C) Cystine
  - D) Phenylalanine
- 

42) Bordeaux mixture consists of

- A) None of the above
  - B) Copper sulphate and zinc
  - C) Copper sulphate and lime
  - D) Calcium carbonate and lime
- 

43) Bacteria reproduce by

- A) all
  - B) budding
  - C) binary fission
  - D) fragmentation
- 

44) An organic nutrient essential to an organism's metabolism that cannot be synthesized itself is termed as:

- A) growth factor
- B) trace element
- C) micronutrient
- D) major nutrient

45) Main difference between fimbriae and sex pili is

- A) pili are sex factor determined while fimbriae are not
  - B) only fimbriae are determined by sex factors
  - C) both are determined by nucleoid
  - D) both are determined by sex factors
- 

46) The process in which the cell actually divides is called:

- A) Meiosis
  - B) Cytokinesis
  - C) mitosis
  - D) None of the above
- 

47) Red rust of tea is caused by:

- A) *Cephaleuros parasiticum*
  - B) *Melampsora lini*
  - C) *Puccinia graminis*
  - D) *Ustilago tritici*
- 

48) The pyramid of energy in an ecosystem is always:

- A) Upright
  - B) Straight
  - C) Inverted
  - D) Upright and inverted
- 

49) Fungi, which can grow only on living host plant, are called

- A) Obligate parasite
- B) Obligate saprophyte
- C) Facultative parasite
- D) Saprophytes

50) A substance dissimilar to substrate but competent of reversibly altering the activity of enzyme by binding to a site other than active site is called:

- A) Competitive inhibitor
  - B) Allosteric modulator/inhibitor
  - C) Non-competitive inhibitor
  - D) Catalytic inhibitor
- 

51) Which among the following is an example of short day plants:

- A) Tomato
  - B) Capsicum
  - C) Arabidopsis
  - D) Soyabean
- 

52) Saffron is produced from:

- A) Style and stigma of Crocus
  - B) Roots of Indigofera
  - C) Petals of Rose
  - D) Stamens of Hibiscus
- 

53) The function of mitochondria is:

- A) Degradation of proteins
  - B) intracellular digestion
  - C) intracellular transport of proteins
  - D) cellular respiration (ATP synthesis)
- 

54) The ability of a microscope to distinguish two adjacent points as distinct & separate is known as

- A) magnification power
- B) brightening power
- C) resolving power
- D) none of the above

55) In a food chain largest population is that of

- A) Producers
  - B) Primary consumers
  - C) Decomposers
  - D) Secondary consumers
- 

56) 55 S ribosomes are found in

- A) Mammalian mitochondria
  - B) Unicellular organisms
  - C) Bacteria and cyanobacteria
  - D) Chloroplasts
- 

57) Equisetum is commonly called:

- A) Horsetail
  - B) Stonewort
  - C) Clubmoss
  - D) Quillwort
- 

58) The right handed shell coiling is known as

- A) Sinistral
  - B) Clockwise
  - C) Dextral
  - D) Anticlockwise
- 

59) In vertebrates brain and spinal cord have been derived from

- A) Lateral nerve cord
  - B) Dorsal solid nerve cord
  - C) Dorsal hollow nerve cord
  - D) Ventral solid nerve cord
-

60) Eyes on potato tubers represent:

- A) Buds
  - B) Sutures
  - C) rootlets
  - D) Scars
- 

61) Bacterial ribosomes have a sedimentation coefficient of

- A) 80S
  - B) 70S
  - C) 90S
  - D) 60S
- 

62) Oxidative enzymes are found in

- A) Golgi bodies
  - B) Rough Endoplasmic Reticulum
  - C) Lysosomes
  - D) Mitochondria
- 

63) What is the sugar molecule found in DNA?

- A) Deoxyribose
  - B) Oxyribose
  - C) None of the above
  - D) Ribose
- 

64) Cell of higher plants differ from an animal cell with respect to the absence of

- A) Endoplasmic reticulum
- B) Centrioles
- C) Mitochondria
- D) Ribosomes

65) Which of the following amino acids can stabilize protein structure by forming disulphide bonds?

- A) Cysteine
  - B) Lysine
  - C) Arginine
  - D) Alanine
- 

66) The flax fibers are obtained from:

- A) *Cocos nucifera*
  - B) *Cannabis sativa*
  - C) *Linum usitatissimum*
  - D) *Crotalaria juncia*
- 

67) Pili play role in

- A) conjugation
  - B) none
  - C) infection
  - D) both
- 

68) An obligate halophile requires high concentration of -----

- A) temperature
  - B) salt
  - C) pH
  - D) pressure
- 

69) Which fish is considered as living fossil?

- A) Flying fish
- B) Dog fish
- C) Dodo
- D) Coelacanth

70) Bryophyta acts as a connecting link between:

- A) Pteridophyta and gymnosperms
  - B) Algae and fungi
  - C) Thallophyta and pteridophyta
  - D) Terrestrial fungi and aquatic fungi
- 

71) Viruses were discovered by:

- A) Stanley
  - B) Twort
  - C) Iwanowsky
  - D) Herelle
- 

72) Which of the following amino acids is optically inactive?

- A) Glycine
  - B) Proline
  - C) Arginine
  - D) Serine
- 

73) Ampullae of Lorenzini are located in

- A) Stomach
  - B) Dorsal fins
  - C) Snout
  - D) Lateral fins
- 

74) Perichaetium is seen in:

- A) Archeogoniophore
- B) Antheridiophore
- C) Sporogonium
- D) Sporophyte

75) Which of the following muscles does not help birds in flight?

- A) Coraco-humeral
  - B) Extensor muscles
  - C) Triceps
  - D) Pectoralis major
- 

76) Penicillin is a \_\_\_\_\_ antibiotic

- A) macrolide
  - B)  $\beta$ -lactam
  - C) aminoglycoside
  - D) carbohydrate
- 

77) Meiosis takes place in

- A) None of the above
  - B) Vegetative cells
  - C) Both A and B
  - D) Reproductive cells
- 

78) Which process releases di-nitrogen gas ( $N_2$ ) back into the atmosphere

- A) Denitrification
  - B) nitrification
  - C) nitrogen fixation
  - D) decay
- 

79) Koch's postulate provide guidelines to identify

- A) microbes contaminating dairy products
- B) viruses
- C) disease causing microorganisms
- D) none of the above

80) *Triticum dicoccum* is commonly known as:

- A) Club wheat
  - B) Durum wheat
  - C) Emmer wheat
  - D) Einkorn wheat
- 

81) Bacteria divides through a process called:

- A) Conjugation
  - B) Animal Cell
  - C) Binary fission
  - D) sexual reproduction
- 

82) Cell theory was given by

- A) Robert Brown
  - B) Urey and Miller
  - C) Robert Hooke
  - D) Schleiden and Schwann
- 

83) In maize, the food is stored in:

- A) Scutellum
  - B) Cotyledons
  - C) Aleurone layer
  - D) Endosperm
- 

84) The word cell was coined by

- A) Robert Hooke
- B) Pasteur
- C) Antony van Leeuwenhoek
- D) Theodore Schwann

85) Which of these is used as biocontrol agent

- A) Manure
  - B) Mycorrhizza
  - C) *Rhizobium*
  - D) *Trichoderma*
- 

86) Table sugar sucrose is formed from

- A) glucose and glucose
  - B) glucose and galactose
  - C) fructose and galactose
  - D) glucose and fructose
- 

87) The nucleus of a cell:

- A) Part of lysosome
  - B) contains DNA and controls cell activities
  - C) is the region of the cell where ribosomes are degraded
  - D) is contained inside the nucleolus
- 

88) Which part of sperm is formed by golgi bodies?

- A) Middle piece
  - B) Head
  - C) Axial filament
  - D) Acrosome
- 

89) Which of the following larva migrates from river to ocean after metamorphosis

- A) Velliger
- B) Bipinnaria
- C) Trocophore
- D) Ammocoeta

90) The space between alimentary canal and body wall in Ascaris is

- A) Gastrocoel
  - B) Pseudocoel
  - C) Paracoel
  - D) Haemocoel
- 

91) Chitin found in the exoskeleton of insects, crabs and lobsters as well as in cell walls of fungi is a

- A) Lipoprotein
  - B) Protein
  - C) Polysaccharide
  - D) Lipid
- 

92) Who wrote the book 'Species Plantarum'?

- A) Bentham and Hooker
  - B) Gaspard Bauhin
  - C) Carolus Linnaeus
  - D) Rivinus
- 

93) Cellulose, a constituent of plant cell wall is made of

- A) branched chain of glucose molecules linked by  $\alpha$ -1,6 glycosidic bond at the site of branching
  - B) unbranched chain of glucose molecules linked by  $\alpha$ -1,4 glycosidic bond
  - C) unbranched chain of glucose molecules linked by  $\beta$ -1,4 glycosidic bond
  - D) branched chain of glucose molecules linked by  $\beta$ -1,4 glycosidic bond in straight chain and  $\alpha$  1,6 glycosidic bond at the site of branching
- 

94) Nannandrium of Oedogonium is a:

- A) Dwarf female
  - B) Abnormal male
  - C) Dwarf male
  - D) Normal female
-

95) The scientists who finally disproved spontaneous theory of generation was

- A) All of above
  - B) Theodre Schwann
  - C) John Tyndall
  - D) Louis Pasteur
- 

96) According to Whittaker's five system classification monera are

- A) Multicellular eukaryotes
  - B) Unicellular eukaryotes
  - C) Unicellular prokaryotes
  - D) None of the above
- 

97) Which one of the following conditions is called monosomics:

- A)  $n+1$
  - B)  $2n+1$
  - C)  $2n+2$
  - D)  $2n-1$
- 

98) If an *Amoeba* is transferred from river water to estuarine water

- A) Its contractile vacuole disappears
  - B) It stops feeding
  - C) It divides immediately
  - D) It undergoes encystment
- 

99) Chordate with teeth on tongue is categorised as

- A) Lamprey
- B) Pisces
- C) Frog
- D) Protochordates

100) A chromosome with subterminal centromere is called

- A) Telocentric
- B) Metacentric
- C) Acrocentric
- D) Submetacentric

**Answer Keys****Question Paper No: 60877\_5**

|    |   |    |   |    |   |     |   |
|----|---|----|---|----|---|-----|---|
| 1  | C | 26 | A | 51 | D | 76  | B |
| 2  | C | 27 | A | 52 | A | 77  | D |
| 3  | D | 28 | A | 53 | D | 78  | A |
| 4  | B | 29 | A | 54 | C | 79  | C |
| 5  | B | 30 | C | 55 | C | 80  | C |
| 6  | D | 31 | B | 56 | A | 81  | C |
| 7  | D | 32 | B | 57 | A | 82  | D |
| 8  | C | 33 | A | 58 | C | 83  | D |
| 9  | C | 34 | C | 59 | C | 84  | A |
| 10 | C | 35 | C | 60 | A | 85  | D |
| 11 | D | 36 | D | 61 | B | 86  | D |
| 12 | A | 37 | C | 62 | D | 87  | B |
| 13 | D | 38 | D | 63 | A | 88  | D |
| 14 | C | 39 | D | 64 | B | 89  | D |
| 15 | D | 40 | C | 65 | A | 90  | B |
| 16 | D | 41 | A | 66 | C | 91  | C |
| 17 | B | 42 | C | 67 | D | 92  | C |
| 18 | B | 43 | A | 68 | B | 93  | C |
| 19 | C | 44 | A | 69 | D | 94  | C |
| 20 | B | 45 | A | 70 | C | 95  | D |
| 21 | D | 46 | B | 71 | C | 96  | C |
| 22 | B | 47 | A | 72 | A | 97  | D |
| 23 | B | 48 | A | 73 | C | 98  | A |
| 24 | B | 49 | A | 74 | A | 99  | A |
| 25 | C | 50 | B | 75 | B | 100 | C |