

BIOLOGY UG SHIFT I
(FINAL)

1. The reason for the success of Gregor Mendel's experiments was the selection of garden pea *Pisum sativum* as his experimental material. The plants were easy to cultivate and had a short generation time. Although peas normally self-pollinate, they could be cross-pollinated. When these varieties self-pollinated, they were true-breeding. Choose the correct option of the traits studied by Mendel
 - (I) Stem length, Pod shape
 - (II) Seed shape, Seed colour
 - (III) Flower position, flower colour
 - (IV) Pod colour, leaf shape
 - (A) (I), (II), (III)
 - (B) Only (I)
 - (C) (II), (III), (IV)
 - (D) (I), (II), (IV)

2. Mendel's monohybrid cross experiments showed that inheritance cannot be the result of a blending phenomenon. Which of the following is **NOT** correct about law of segregation?
 - (A) Each individual has two factors for each trait
 - (B) The factors segregate (separate) during the formation of the gametes
 - (C) Each gamete contains only one factor from each pair of factors
 - (D) Through fertilization each new individual gets two traits for each factor

3. Persons with Marfan syndrome have disproportionately long arms, legs, hands, and feet; a weakened aorta; poor eyesight; and other characteristics. This disorder is linked to a mutated gene (FBN_1) that affects two or more distinct and seemingly unrelated traits. This is an example of
 - (A) Incomplete dominance
 - (B) Pleiotropy
 - (C) Co dominance
 - (D) Incomplete penetrance

4. Meselson and Stahl devised an experiment to prove that DNA is replicated in semiconservative nature. For that they first grew some bacteria in ^{15}N heavy medium and then transferred them to ^{14}N light medium. A centrifuge was used to separate DNA molecules labelled with isotopes of different densities. After two generations on centrifugation, they found
- (A) a single band corresponding with dense DNA
 - (B) a single band of intermediate density
 - (C) two equally large DNA bands: one of low density and one of intermediate density
 - (D) two equally large DNA bands: one of low density and one of heavy density
5. If the sequence of DNA on the template strand of a gene is TAC, the mRNA codon produced by transcription will be and will specify the amino acid
- (A) AUG, tryptophan
 - (B) AUG, methionine
 - (C) AUG, lysine
 - (D) AUG, threonine
6. Under a microscope, one often observes dark-stained fibers within the nucleus of the cell. These areas within the nucleus represent a more highly compacted form of the chromosome called heterochromatin. They represent
- (A) Active chromatin containing genes that are being transcribed
 - (B) Inactive chromatin containing genes infrequently transcribed
 - (C) Highly transcribed nucleolar rRNA gene
 - (D) Chromatin in which the histone tails tend to be acetylated and have attached acetyl groups
7. Which of the following is considered as the era of Angiosperms?
- (A) Mid cretaceous
 - (B) Late cretaceous
 - (C) Late Jurassic
 - (D) Early Jurassic

8. Which of the following is **CORRECT** with regard to the central dogma of molecular biology?
- (A) The DNA macromolecule stores information that can either be copied (replicated) or transcribed into RNA. RNA can then be translated into protein
 - (B) The RNA macromolecule stores information that can either be copied (replicated) or transcribed into DNA. DNA can then be translated into protein
 - (C) The DNA macromolecule stores information that can transcribe into mRNA. DNA can then be translated into protein
 - (D) The RNA molecule is transcribed into DNA and translated into polypeptide
9. Nondisjunction in meiosis results in aneuploid gametes. When this aneuploid gamete fuses with normal haploid gamete, aneuploid zygote is formed. The aneuploidy of X chromosome- monosomy X is called
- (A) Down syndrome
 - (B) Turner syndrome
 - (C) Klinefelter's syndrome
 - (D) Thalassemia
10. A cluster of genes with a single promoter is called an operon. The operon that encodes the three lactose-metabolizing enzymes in *E. coli* is called the *lac operon*. Which of the following is correct, when lactose is present in a cell?
- (A) The repressor protein encoded by gene *i* prevents transcription by binding to the operator
 - (B) Lactose induces transcription by binding to the repressor, which then can bind to the operator RNA polymerase binds to the promoter
 - (C) Lactose induces transcription by binding to the repressor, which then cannot bind to the operator RNA polymerase binds to the promoter
 - (D) The repressor protein encoded by gene *i* helps transcription by binding to the operator
11. Engler and Prantl published the phylogenetic system of classification in the monograph
- (A) *Historia plantarum*
 - (B) *Species plantarum*
 - (C) *Die Natürlichen Pflanzenfamilien*
 - (D) *Genera plantarum*

12. Match the items in Column 1 with those in Column II and choose the correct option

Column I		Column II	
A	Basidium	1	Diatom
B	Ascus	2	Scytonema
C	Chrysophytes	3	Aspergillus
D	Cyanobacteria	4	Agaricus

- (A) A-3, B-4, C-1, D-2
(B) A-2, B-4, C-3, D-1
(C) A-4, B-3, C-1, D-2
(D) A-4, B-3, C-2, D-1

13. Match the items in Column 1 with those in Column II and choose the correct combination

Column I		Column II	
A	Walking fern	1	Anthoceros
B	Hornwort	2	Spirogyra
C	Royal fern	3	Adiantum
D	Pond silk	4	Osmunda

- (A) A-3, B-4, C-1, D-2
(B) A-3, B-1, C-4, D-2
(C) A-4, B-1, C-3, D-2
(D) A-4, B-3, C-2, D-1

14. Name the group of animals having unsegmented, coelomic body and radial symmetry with distinct oral and aboral surfaces

- (A) Echinodermata
(B) Mollusca
(C) Arthropoda
(D) Porifera

15. Choose the correct sequence in the descending order of hierarchical system of taxonomic classification

- (A) Class - division - order - family - genus - species
(B) Species - genus - family - order - class - division
(C) Species - genus - family - order - division - class
(D) Division - class - order - family - genus - species

16. Neurodegenerative diseases such as *kuru disease* and *mad cow disease* are caused by
- (A) Viroids
 - (B) Virus
 - (C) Prions
 - (D) Virions
17. Type of nucleic acid in COVID 19 virus is
- (A) Single stranded RNA
 - (B) Single stranded DNA
 - (C) Double stranded DNA
 - (D) Double stranded RNA
18. The leaves are modified into tendrils, spines, pitcher and bladder respectively in the following plants. Choose the **CORRECT** sequence.
- (A) Gloriosa, Opuntia, Nepenthes, Utricularia
 - (B) Pea, Rose, Nepenthes, Utricularia
 - (C) Gloriosa, Rose, Nepenthes, Utricularia
 - (D) Pea, Bogainvillae, Nepenthes, Utricularia
19. Which of the following is **NOT** a characteristic feature of Solanaceae?
- A epipetalous and syngenesious anthers
 - B bicarpellary and syncarpous, superior ovary
 - C oblique ovary with axile placentation
 - D bicarpellary syncarpous, inferior ovary
- (A) A and B
 - (B) B and C
 - (C) A and D
 - (D) D only

20. Match the items in Column 1 with those in Column II and choose the correct combination

Column I

- A Monocyte
- B Lymphocyte
- C Neutrophil
- D Eosinophil

Column II

- 1 Bilobed nucleus
- 2 2-7 lobed nucleus
- 3 Single large nucleus
- 4 Kidney shaped nucleus

- (A) A-3, B-4, C-2, D-1
- (B) A-3, B-4, C-1, D-2
- (C) A-4, B-3, C-1, D-2
- (D) A-4, B-3, C-2, D-1

21. In a myelinated neuron, two adjacent myelin sheaths are separated by gaps called

- (A) Nodes of ranvier
- (B) Synaptic knob
- (C) Synaptic cleft
- (D) Schwann cells

22. Match the items in Column 1 with those in Column II and choose the correct combination

Column I

- A Stellate chloroplast
- B Reticulate chloroplast
- C Cup shaped chloroplast
- D Girdle shaped chloroplast

Column II

- 1 Girdle shaped chloroplast
- 2 Oedogonium
- 3 Ulothrix
- 4 Spirogyra
- 5 Zygnema

- (A) A-2, B-3, C-5, D-4
- (B) A-2, B-1, C-5, D-3
- (C) A-4, B-1, C-5, D-2
- (D) A-4, B-2, C-5, D-1

23. Portuguese man of war is the common name of

- (A) Physalia
- (B) Aurelia
- (C) Nautilus
- (D) Cypraea

24. Which one of the following is correctly paired?

- (A) Cockroach-Nephridia
- (B) Flatworm-Nephridia
- (C) Earthworm-Flame cells
- (D) Balanoglossus-Proboscis gland

25. Arrange the following stages of pollen formation and development in the correct order

- (1) Pollen mother cell
- (2) Pollen tetrad
- (3) Pollen grain
- (4) Vegetative cell
- (5) Generative cell

- (A) (1) - (2) - (3) - (4) - (5)
- (B) (2) - (5) - (4) - (3) - (1)
- (C) (1) - (2) - (3) - (5) - (4)
- (D) (1) - (2) - (4) - (3) - (5)

26. Sperms are produced in testis by equational division and reductional division. These sperms are embedded in the sertoli cells and released. These events take place in the order of

- (1) Spermatozoa
- (2) Spermatid
- (3) Spermatogonium
- (4) Spermiogenesis
- (5) Spermiation

- (A) (3) - (4) - (2) - (1) - (5)
- (B) (3) - (1) - (4) - (2) - (5)
- (C) (1) - (5) - (3) - (2) - (4)
- (D) (3) - (2) - (4) - (1) - (5)

27. Which of the following arrangements of ecosystems is **CORRECT** on the basis of productivity?
- (A) Tropical rain forest < Temperate rain forest < Grass land < Tundra < Open ocean
 - (B) Grass land < Temperate rain forest < Tropical rain forest < Open ocean < Tundra
 - (C) Tropical rain forest > Temperate rain forest > Grass land > Tundra > Open ocean
 - (D) Temperate rain forest > Tundra > Grass land > Temperate rain forest > Open ocean
28. If a double stranded DNA is composed of 15% Thymine (T), find out the concentrations of the remaining bases
- (A) Adenine (A) = 35%, Guanine (G) = 15% and Cytosine (C) = 35%
 - (B) Adenine (A) = 35%, Guanine (G) = 35% and Cytosine (C) = 15%
 - (C) Adenine (A) = 15%, Guanine (G) = 15% and Cytosine (C) = 35%
 - (D) Adenine (A) = 15%, Guanine (G) = 35% and Cytosine (C) = 35%
29. In humans both male and female have different reproductive system. But they are homologues in nature. Clitoris is homologues to
- (A) Scrotum
 - (B) Glans penis
 - (C) Cowper's gland
 - (D) Seminal vesicles
30. Pollinia are the feature of two plant families. Name them
- (A) Orchidaceae and Apocyanaceae
 - (B) Orchidaceae and Poaceae
 - (C) Amarylidaceae and Asteraceae
 - (D) Apocyanaceae and Poaceae
31. Sugarcane shows high efficiency of CO₂ fixation because it performs
- (A) Calvin cycle
 - (B) EMP Pathway
 - (C) Hatch and Slack pathway
 - (D) TCA cycle

32. Transposons are also known as
- (A) Walking genes
 - (B) Elimination genes
 - (C) Jumping genes
 - (D) Initiation genes
33. Fertilization of haploid gametes retains diploid character in humans. Correct order of fertilization in humans is
- (1) Release of secondary polar body
 - (2) Capacitation of sperm
 - (3) Fimbriae collect secondary oocyte
 - (4) Change in the membrane that block the entry of other sperms
 - (5) At ampulla - isthmic junction spermatozoa contact with zona pellucida layer
- (A) (1) - (3) - (2) - (5) - (4)
 - (B) (1) - (3) - (5) - (2) - (4)
 - (C) (2) - (3) - (5) - (4) - (1)
 - (D) (2) - (3) - (1) - (5) - (4)
34. To help infertile couples, assisted reproductive technologies are developed under the control of experts. In which among the following techniques, natural fertilization takes place?
- (A) IVF
 - (B) ICSI
 - (C) GIFT
 - (D) None of the above
35. Sexual diseases like Gonorrhoea, Syphilis, Hepatitis B are commonly known as
- (A) STDs (Sexually Transmitted Diseases)
 - (B) VD (Venereal Diseases)
 - (C) RTI (Reproductive Tract Infections)
 - (D) All of the above
36. What is the ploidy of normal endosperm?
- (A) n
 - (B) $2n$
 - (C) $3n$
 - (D) $4n$
37. Glycolate accumulation occurs in chloroplast, when there is

- (A) High CO₂
- (B) Bright light
- (C) Low temperature
- (D) Low CO₂

38. What is the transfer method of the fatty acids into and out of mitochondria?

- (A) Active transport
- (B) Facilitated transfer
- (C) Non-facilitated transfer
- (D) None of the above

39. Which among the following statements about glycoproteins are correct?

- (I) In glycoproteins, presence of carbohydrates on protein molecule protects them from denaturation
- (II) Gangliosides are glycoproteins
- (III) Blood clotting factors, hormones such as FSH, Na⁺-K⁺ ATPase and MHC are glycoproteins
- (IV) Components of the glycocalyx are responsible for cell adhesion
- (V) Blood group antigens A and B are glycoproteins

- (A) (I), (II), (III) and (IV) only
- (B) (I), (III) and (IV) only
- (C) (I), (III), (IV) and (V) only
- (D) (III), (IV) and (V) only

40. Which of the following statements is correct about membrane cholesterol?

- (A) The hydrocarbon chain of cholesterol projects into the extracellular fluid
- (B) Most of the cholesterol is in the form of cholesterol ester
- (C) The hydroxyl group is located near the centre of the lipid layer
- (D) The steroid nucleus forms a rigid, planar structure

41. The enzyme lysozyme kills bacteria by hydrolyzing the β (1→4) glycosidic bond between

- (A) N-acetyl glucosamine and N-acetyl neuraminic acid
- (B) N-acetyl neuraminic acid and N-acetyl muramic acid
- (C) N-acetyl glucosamine and N-acetyl muramic acid
- (D) N-acetyl galactosamine and N-acetyl neuraminic acid

42. Given below are some statements about amino acids.
- (I) The net charge on an amino acid is a function of the pH of the solution
 - (II) R- group of the amino acids play important role in solubility
 - (III) Peptide bonds are planar and partially ionic
 - (IV) Amino acids are soluble in water at their isoelectric point

Which of the following combinations is **CORRECT**?

- (A) (I) and (II) only
 - (B) (I), (II) and (III) only
 - (C) (II), (III) and (IV) only
 - (D) (I), (II), (III) and (IV)
43. Release of free fatty acids from adipose tissue is increased by all of the following except,
- (A) Glucagon
 - (B) Insulin
 - (C) Epinephrine
 - (D) Growth hormone
44. Isomeric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atoms are called
- (A) Enantiomers
 - (B) Anomers
 - (C) Epimers
 - (D) Diastereo isomers
45. Coconut oil contains only a very small amount of unsaturated fatty acids. How can it still have a low melting point?
- (A) It has only a few hydrogen bonds per fatty acid chain
 - (B) It has numerous hydrogen bonds per fatty acid chain
 - (C) It contains mostly short chain fatty acids
 - (D) It contains a lot of long chain fatty acids

46. Pick the **INCORRECT** one

(A) $A+T = G+C$

- (B) $A+G = T+C$
- (C) $A/G = T/C$
- (D) $A+G/C+T = 1$

47. All the following have 18 carbon atoms **except**,

- (A) Linoleic acid
- (B) Linolenic acid
- (C) Arachidonic acid
- (D) Stearic acid

48. How do double bonds and chain length influence the melting temperature of a fatty acid?

- (A) Increases with double bonds and increasing chain length
- (B) Decreases with double bonds and increasing chain length
- (C) Increases with double bonds and decreases with increasing chain length
- (D) Decreases with double bonds and increases with increasing chain length

49. Which of the following is **NOT** a digestive enzyme?

- (A) Trypsin
- (B) Chymotrypsin
- (C) Carboxy peptidase
- (D) Carbonyl anhydrase

50. The cell cycle is an ordered series of events by which cell duplicates and it is controlled by which all of the following?

- (I) Cyclin synthesis and degradation
- (II) Phosphorylation of CDKs
- (III) Binding of CDK inhibitor proteins
- (IV) Dephosphorylation of CDKs

- (A) (I), (II) and (III)
- (B) (I), (III) and (IV)
- (C) (I) and (III)
- (D) (I), (II), (III) and (IV)

51. Which of the following activities are characteristics of peroxisomes?
- (I) Catalase activity
 - (II) Lipid biosynthesis
 - (III) Degradation of very long-chain fatty acids
 - (IV) Produce dihydrogen
- (A) (I) and (III)
(B) (I) and (II)
(C) (III) and (II)
(D) (II) and (IV)
52. Never dividing cells such as neurons can be explained as being in the stage of cell cycle
- (A) G₀
(B) G₁
(C) G₂
(D) M
53. Name the Cyclin which plays a role in M phase of cell cycle
- (A) Cyclin E
(B) Cyclin M
(C) Cyclin A
(D) Cyclin B
54. Which of the following family of kinesins is incapable of movement along the microtubules?
- (A) kinesin-1
(B) kinesin-3
(C) kinesin-13
(D) kinesin-14
55. The drug colchicine promotes the of microtubules
- (A) disassembly
(B) assembly

- (C) acidification
- (D) condensation

56. What is the name of the drug which inhibits Na^+/K^+ pump across the cell membrane?

- (A) Taxol
- (B) Vinblastine
- (C) Quinone
- (D) Ouabain

57. Which of the following amino sugar is present in the bacterial cell wall?

- (A) N-acetylmuramic acid
- (B) Sialic acid
- (C) Aminoglycoside
- (D) Azide

58. Which of the following is the **CORRECT** statement regarding Histidine?

- (A) Histidine is a polar essential amino acid having imidazole ring
- (B) Histidine is a polar non-essential amino acid having imidazole ring
- (C) Histidine is a non-polar essential amino acid having guanidium ring
- (D) Histidine is a polar essential amino acid having guanidium ring

59. Which of the following glycosidic linkages is found in maltose?

- (A) Glucose (α -1 – 2 β) Fructose
- (B) Glucose (α 1 – 4) Glucose
- (C) Galactose (β 1 – 4) Glucose
- (D) Glucose (β 1 – 4) Glucose

60. Beta-oxidation of fatty acids occurs in which organelle/organelles?

- (A) Peroxisome
- (B) Peroxisome and Mitochondria
- (C) Mitochondria
- (D) Peroxisome, Mitochondria and ER

61. Which of the following reactions is an example of oxidative decarboxylation ?

- (A) Conversion of succinate to fumarate
- (B) Conversion of fumarate to malate

- (C) Conversion of pyruvate to acetyl Co.A
- (D) Conversion of citrate to isocitrate

62. Give the reason for the rancidity of lipids of lipid-rich foodstuffs

- (A) Reduction of fatty acids
- (B) Hydrogenation of unsaturated fatty acids
- (C) Dehydrogenation of saturated fatty acids
- (D) Oxidation of fatty acids

63. Which of the following portions of a longer duplex DNA segment are likely to be recognition sequences of a restriction enzyme?

- (A) 5'-AGTC-3' and 3'-TCAG-5'
- (B) 5'-ATCG-3' and 3'-TAGC-5'
- (C) 5'-ACCT-3' and 3'-TGGA-5'
- (D) 5'-ACGT-3' and 3'-TGCA-5'

64. Name the technique which is used to enhance the shelf life of tomato?

- (A) Antisense technology
- (B) In vitro gene transfer
- (C) Ex vivo gene transfer
- (D) Molecular farming

65. The chromosomes which determine the gender of an organism are called sex chromosomes. Which of the following is the **CORRECT** representation of chromosomes for sex determination in birds?

- (A) Female ZW, males ZZ
- (B) Females XX, males X0
- (C) Females XX, males XY
- (D) Females ZZ, males ZW

66. The enzyme employed for amplification of DNA during PCR is commercially obtained from

- (A) *Trichoderma reesei*
- (B) *Bacillus licheniformis*
- (C) *Streptococcus pyogenes*
- (D) *Thermus aquaticus*

67. Hexose monophosphate pathway takes place in
- (A) ER
 - (B) Mitochondrial matrix
 - (C) Cytoplasm
 - (D) Inner membrane of mitochondria
68. Artificial seeds refer to
- (A) Seeds of a plant with desired characteristics synthesized with recombinant DNA technology
 - (B) Somatic embryos encapsulated in a gel
 - (C) Seeds of synthetic plants
 - (D) All of the above
69. Which of the following can be used for transferring DNA into the host cells?
- A Transformation
 - B Sonification
 - C Transfection
 - D Electroporation
- (A) Only A
 - (B) Both A and B
 - (C) Only B, C and D
 - (D) Only A, B and C
70. Name the strategy where 'two-plasmid system' is used for the introduction of the gene
- (A) Binary vector system
 - (B) Co-integration vector strategy
 - (C) Agrobacterium
 - (D) Selectable marker strategy
71. Choose the right combination of components required to set up a PCR, from the following
- (A) Template DNA, 2 primers, dNTPS and DNA polymerase
 - (B) Template DNA, 2 primers, dNTPS and DNA ligase
 - (C) Template DNA, 2 primers, NTPS and DNA ligase
 - (D) Template RNA, 2 primers, dNTPS and DNA polymerase
72. Name the first transgenic virus resistant plant

- (A) Rice
- (B) Cotton
- (C) Tobacco
- (D) Tomato

73. Name the enzyme which has been silenced in order to delay the fruit ripening process

- (A) Polygalacturonase
- (B) Glyphosate
- (C) ADA
- (D) P53

74. How human insulin is synthesized using recombinant DNA technology?

- (A) By using chemically synthesized DNA sequences for the two chains separately
- (B) By isolating DNA from the islets of Langerhans of pancreas
- (C) By using cDNA for insulin
- (D) By using chemically synthesized DNA sequences for the complete insulin protein

75. Which of the following viruses is **NOT** used in gene therapy?

- (A) Papillomavirus
- (B) Retrovirus
- (C) Adenovirus
- (D) Herpes simplex virus

76. Which of the following reactions take(s) place at the pulmonary capillaries?

- (A) $\text{Hb} + \text{O}_2 \rightarrow \text{HbO}_2$
- (B) $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}^+ + \text{HCO}_3^-$
- (C) $\text{Hb} + \text{CO}_2 \rightarrow \text{HbCO}_2$
- (D) $\text{Hb} + \text{H}^+ \rightarrow \text{HbH}$

77. What happens during sympathetic stimulation of the heart?

- (A) increases the heart rate
- (B) increases the contractility of the heart muscle
- (C) shifts the Frank–Starling curve to the left
- (D) All of the above

78. Which of the following compounds is generally translocated through the phloem?

- (A) Sucrose
- (B) Mannose
- (C) Glucose
- (D) Fructose

79. Which of the following filtered substances is normally **NOT** present in the urine?

- (A) Na^+
- (B) PO_4^{3-}
- (C) urea
- (D) glucose

80. What happens during the corpus luteum degeneration?

- (A) Circulating levels of estrogen and progesterone rapidly decline
- (B) FSH and LH secretion start to rise as the inhibitory effects of the gonadal steroids are withdrawn
- (C) the endometrium sloughs off
- (D) All of the above

81. Which of the following are mucus-producing glands located on each side of the vaginal opening?

- (A) Adrenal
- (B) Bartholin's
- (C) Bulbourethral
- (D) Corpus luteum

82. Which of the following conditions is characterized by incompetence of the esophageal sphincter?

- (A) Crohn's disease
- (B) Esophageal varices
- (C) Gastroesophageal reflux disease
- (D) Pyloric stenosis

83. Which of the following statements regarding membrane transport is **FALSE**?

- (A) Polar and charge solutes will not cross cell membranes effectively without specific protein carriers
- (B) Each protein carrier will only bind and transport one (or a few very similar) type of solute
- (C) Sugars such as glucose are always transported by active transport than by facilitated diffusion carriers

(D) Ions are typically transported by special proteins that form membrane channels

84. Which one is the test for gibberellin?

- (A) Bolting in cabbage
- (B) Morphogenesis in tobacco callus
- (C) Rapid division in carrot cells
- (D) Elongation of oat coleoptile

85. What happens if a growing plant is decapitated?

- (A) axillary buds are inactivated
- (B) axillary buds are activated
- (C) leaves become yellow and have tendency to fall down
- (D) growth stops

86. Which of the following is **NOT** a characteristic property of carotenoid?

- (A) They possess complex porphyrin ring
- (B) They are integral constituent of thylakoid membrane
- (C) They are also called accessory pigment
- (D) They protect the plants from damages caused by light

87. Which of the following plants is **NOT** an example for roots with adventitious buds?

- (A) *Murraya*
- (B) *Solanum*
- (C) *Dalbergia*
- (D) *Millingtonia*

88. The innermost layer of the anther wall is called

- (A) Endodermis
- (B) Endothecium
- (C) Tapetum
- (D) Stomium

89. The upper portion of a plant that is grafted onto the base of another plant is known as

- (A) Scion
- (B) Stalk
- (C) Stock

(D) Crown

90. Which of the following is **NOT** a part of the ovule?

- (A) Nucellus
- (B) Chalaza
- (C) Pollinium
- (D) Embryo sac

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FINAL ANSWER KEY**Subject Name: MSc BIOLOGY**

SI No.	Key	SI No.	Key	SI No.	Key
1	A	31	C	61	A
2	D	32	C	62	D
3	B	33	C	63	D
4	C	34	C	64	A
5	B	35	D	65	A
6	B	36	C	66	D
7	B	37	D	67	C
8	A	38	B	68	B
9	B	39	B	69	C
10	C	40	D	70	A
11	C	41	C	71	A
12	C	42	B	72	C
13	B	43	B	73	A
14	A	44	B	74	A
15	D	45	A	75	A
16	C	46	A	76	A
17	A	47	C	77	D
18	A	48	D	78	A
19	C	49	D	79	D
20	D	50	D	80	D
21	A	51	B	81	B
22	C	52	A	82	C
23	A	53	D	83	C
24	D	54	C	84	A
25	A	55	A	85	B
26	D	56	D	86	A
27	C	57	A	87	B
28	D	58	A	88	C
29	B	59	B	89	A
30	A	60	C	90	C