

NEET 2020 — Biology Question Paper with Solutions

83 Biology questions as set in the paper · answers checked by RankUp

NEET 2020 · Q1

1. Which of the following is not an attribute of a population?

- (A) Sex ratio
- (B) Natality
- (C) Mortality
- (D) Species interaction

NEET 2020 · Q2

2. The process of growth is maximum during:

- (A) Log phase
- (B) Lag phase
- (C) Senescence
- (D) Dormancy

NEET 2020 · Q3

3. The roots that originate from the base of the stem are:

- (A) Fibrous roots
- (B) Primary roots
- (C) Prop roots
- (D) Lateral roots

NEET 2020 · Q4

4. Match the following diseases with the causative organism and select the correct option.

Column - I | Column - II

(a) Typhoid | (i) Wuchereria

(b) Pneumonia | (ii) Plasmodium

(c) Filariasis | (iii) Salmonella

(d) Malaria | (iv) Haemophilus

- (A) (a)-i, (b)-iii, (c)-ii, (d)-iv
- (B) (a)-iii, (b)-iv, (c)-i, (d)-ii
- (C) (a)-ii, (b)-i, (c)-iii, (d)-iv
- (D) (a)-iv, (b)-i, (c)-ii, (d)-iii

NEET 2020 · Q5

5. In which of the following techniques, the embryos are transferred to assist those females who cannot conceive?

- (A) ZIFT and IUT
- (B) GIFT and ZIFT
- (C) ICSI and ZIFT
- (D) GIFT and ICSI

NEET 2020 · Q6

6. Identify the wrong statement with reference to the gene 'I' that controls ABO blood groups.

- (A) The gene (I) has three alleles.
- (B) A person will have only two of the three alleles.
- (C) When I^A and I^B are present together, they express same type of sugar.
- (D) Allele 'i' does not produce any sugar.

NEET 2020 · Q7

7. Choose the correct pair from the following:

- (A) Ligases - Join the two DNA molecules
- (B) Polymerases - Break the DNA into fragments
- (C) Nucleases - Separate the two strands of DNA
- (D) Exonucleases - Make cuts at specific positions within DNA

NEET 2020 · Q8

8. Select the correct match.

- (A) Haemophilia - Y linked
- (B) Phenylketonuria - Autosomal dominant trait
- (C) Sickle cell anaemia - Autosomal recessive trait, chromosome-11
- (D) Thalassemia - X linked

NEET 2020 · Q9

9. Match the following columns and select the correct option.

Column - I | Column - II

(a) Gregarious, polyphagous pest | (i) Asterias

(b) Adult with radial symmetry and larva with bilateral symmetry | (ii) Scorpion

(c) Book lungs | (iii) Ctenoplane

(d) Bioluminescence | (iv) Locusta

- (A) (a)-i, (b)-iii, (c)-ii, (d)-iv
- (B) (a)-iv, (b)-i, (c)-ii, (d)-iii
- (C) (a)-iii, (b)-ii, (c)-i, (d)-iv
- (D) (a)-ii, (b)-i, (c)-iii, (d)-iv

NEET 2020 · Q10

10. The infectious stage of Plasmodium that enters the human body is:

- (A) Trophozoites
- (B) Sporozoites
- (C) Female gametocytes
- (D) Male gametocytes

NEET 2020 · Q11

11. Identify the substances having glycosidic bond and peptide bond, respectively in their structure:

- (A) Chitin, cholesterol
- (B) Glycerol, trypsin
- (C) Cellulose, lecithin
- (D) Inulin, insulin

NEET 2020 · Q14

12. Identify the correct statement with regard to G₁ phase (Gap 1) of interphase.

- (A) DNA synthesis or replication takes place.
- (B) Reorganisation of all cell components takes place.
- (C) Cell is metabolically active, grows but does not replicate its DNA.
- (D) Nuclear Division takes place.

NEET 2020 · Q15

13. Cuboidal epithelium with brush border of microvilli is found in:

- (A) lining of intestine
- (B) ducts of salivary glands
- (C) proximal convoluted tubule of nephron
- (D) eustachian tube

NEET 2020 · Q16

14. Which of the following statements about inclusion bodies is incorrect?

- (A) They are not bound by any membrane.
- (B) These are involved in ingestion of food particles.
- (C) They lie free in the cytoplasm.
- (D) These represent reserve material in cytoplasm.

NEET 2020 · Q17

15. Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells?

- (A) Endoplasmic reticulum
- (B) Peroxisomes
- (C) Golgi bodies
- (D) Polysomes

NEET 2020 · Q18

16. In gel electrophoresis, separated DNA fragments can be visualized with the help of:

- (A) Acetocarmine in bright blue light
- (B) Ethidium bromide in UV radiation
- (C) Acetocarmine in UV radiation
- (D) Ethidium bromide in infrared radiation

NEET 2020 · Q19

17. Identify the wrong statement with reference to transport of oxygen.

- (A) Binding of oxygen with haemoglobin is mainly related to partial pressure of O_2 .
- (B) Partial pressure of CO_2 can interfere with O_2 binding with haemoglobin.
- (C) Higher H^+ conc. in alveoli favours the formation of oxyhaemoglobin.
- (D) Low pCO_2 in alveoli favours the formation of oxyhaemoglobin.

NEET 2020 · Q20

18. Ray florets have:

- (A) Inferior ovary
- (B) Superior ovary
- (C) Hypogynous ovary
- (D) Half inferior ovary

NEET 2020 · Q21

19. The specific palindromic sequence which is recognized by EcoRI is:

- (A) 5'-GAATTC-3' / 3'-CTTAAG-5'
- (B) 5'-GGAACC-3' / 3'-CCTTGG-5'
- (C) 5'-CTTAAG-3' / 3'-GAATTC-5'
- (D) 5'-GGATCC-3' / 3'-CCTAGG-5'

NEET 2020 · Q23

20. Which of the following is put into Anaerobic sludge digester for further sewage treatment?

- (A) Primary sludge
- (B) Floating debris
- (C) Effluents of primary treatment
- (D) Activated sludge

NEET 2020 · Q24

21. Select the correct events that occur during inspiration.

- (a) Contraction of diaphragm**
- (b) Contraction of external inter-costal muscles**
- (c) Pulmonary volume decreases**
- (d) Intra pulmonary pressure increases**

- (A) (a) and (b)
- (B) (c) and (d)
- (C) (a), (b) and (d)
- (D) only (d)

NEET 2020 · Q25

22. If the head of cockroach is removed, it may live for few days because:

- (A) the supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen.
- (B) the cockroach does not have nervous system.
- (C) the head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body.
- (D) the head holds a 1/3rd of a nervous system while the rest is situated along the dorsal part of its body.

NEET 2020 · Q26

23. Which of the following statements are true for the phylum-Chordata?

- (a) In Urochordata notochord extends from head to tail and it is present throughout their life.**
- (b) In Vertebrata notochord is present during the embryonic period only.**
- (c) Central nervous system is dorsal and hollow.**
- (d) Chordata is divided into 3 subphyla: Hemichordata, Tunicata and Cephalochordata.**

- (A) (d) and (c)
- (B) (c) and (a)
- (C) (a) and (b)
- (D) (b) and (c)

NEET 2020 · Q27

24. Match the organism with its use in biotechnology.

- (a) *Bacillus thuringiensis* | (i) Cloning vector**
- (b) *Thermus aquaticus* | (ii) Construction of first rDNA molecule**
- (c) *Agrobacterium tumefaciens* | (iii) DNA polymerase**
- (d) *Salmonella typhimurium* | (iv) Cry proteins**

Select the correct option from the following:

- (A) (a)-ii, (b)-iv, (c)-iii, (d)-i
- (B) (a)-iv, (b)-iii, (c)-i, (d)-ii
- (C) (a)-iii, (b)-ii, (c)-iv, (d)-i
- (D) (a)-iii, (b)-iv, (c)-i, (d)-ii

NEET 2020 · Q28

25. Match the following concerning essential elements and their functions in plants:

- (a) Iron | (i) Photolysis of water**
- (b) Zinc | (ii) Pollen germination**
- (c) Boron | (iii) Required for chlorophyll biosynthesis**
- (d) Manganese | (iv) IAA biosynthesis**

Select the correct option:

- (A) (a)-ii, (b)-i, (c)-iv, (d)-iii
- (B) (a)-iv, (b)-iii, (c)-ii, (d)-i
- (C) (a)-iii, (b)-iv, (c)-ii, (d)-i
- (D) (a)-iv, (b)-i, (c)-ii, (d)-iii

NEET 2020 · Q29

26. Identify the incorrect statement.

- (A) Heart wood does not conduct water but gives mechanical support.
- (B) Sapwood is involved in conduction of water and minerals from root to leaf.
- (C) Sapwood is the innermost secondary xylem and is lighter in colour.
- (D) Due to deposition of tannins, resins, oils etc., heart wood is dark in colour.

NEET 2020 · Q30

27. Match the following:

(a) Inhibitor of catalytic activity | (i) Ricin

(b) Possess peptide bonds | (ii) Malonate

(c) Cell wall material in fungi | (iii) Chitin

(d) Secondary metabolite | (iv) Collagen

Choose the correct option from the following:

- (A) (a)-ii, (b)-iv, (c)-iii, (d)-i
- (B) (a)-iii, (b)-i, (c)-iv, (d)-ii
- (C) (a)-iii, (b)-iv, (c)-i, (d)-ii
- (D) (a)-ii, (b)-iii, (c)-i, (d)-iv

NEET 2020 · Q31

28. Meiotic division of the secondary oocyte is completed:

- (A) Prior to ovulation
- (B) At the time of copulation
- (C) After zygote formation
- (D) At the time of fusion of a sperm with an ovum

NEET 2020 · Q32

29. According to Robert May, the global species diversity is about:

- (A) 1.5 million
- (B) 20 million
- (C) 50 million
- (D) 7 million

NEET 2020 · Q34

30. Which of the following regions of the globe exhibits highest species diversity?

- (A) Western Ghats of India
- (B) Madagascar
- (C) Himalayas
- (D) Amazon forests

NEET 2020 · Q35

31. Which of the following statements is not correct?

- (A) In man insulin is synthesised as a proinsulin.
- (B) The proinsulin has an extra peptide called C-peptide.
- (C) The functional insulin has A and B chains linked together by hydrogen bonds.
- (D) Genetically engineered insulin is produced in E-Coli.

NEET 2020 · Q36

32. The transverse section of a plant shows following anatomical features:

(a) Large number of scattered vascular bundles surrounded by bundle sheath.

(b) Large conspicuous parenchymatous ground tissue.

(c) Vascular bundles conjoint and closed.

(d) Phloem parenchyma absent.

Identify the category of plant and its part:

- (A) Monocotyledonous stem
- (B) Monocotyledonous root
- (C) Dicotyledonous stem
- (D) Dicotyledonous root

NEET 2020 · Q37

33. Match the following columns and select the correct option.

Column - I | Column - II

(a) 6 - 15 pairs of gill slits | (i) Trygon

(b) Heterocercal caudal fin | (ii) Cyclostomes

(c) Air Bladder | (iii) Chondrichthyes

(d) Poison sting | (iv) Osteichthyes

(A) (a)-ii, (b)-iii, (c)-iv, (d)-i

(B) (a)-iii, (b)-iv, (c)-i, (d)-ii

(C) (a)-iv, (b)-ii, (c)-iii, (d)-i

(D) (a)-i, (b)-iv, (c)-iii, (d)-ii

NEET 2020 · Q38

34. From his experiments, S.L. Miller produced amino acids by mixing the following in a closed flask:

(A) CH₄, H₂, NH₃ and water vapor at 800°C

(B) CH₃, H₂, NH₄ and water vapor at 800°C

(C) CH₄, H₂, NH₃ and water vapor at 600°C

(D) CH₃, H₂, NH₃ and water vapor at 600°C

NEET 2020 · Q39

35. Embryological support for evolution was disapproved by:

(A) Karl Ernst von Baer

(B) Alfred Wallace

(C) Charles Darwin

(D) Oparin

NEET 2020 · Q40

36. The process responsible for facilitating loss of water in liquid form from the tip of grass blades at night and in early morning is:

(A) Transpiration

(B) Root pressure

(C) Imbibition

(D) Plasmolysis

NEET 2020 · Q41

37. Secondary metabolites such as nicotine, strychnine and caffeine are produced by plants for their:

(A) Nutritive value

(B) Growth response

(C) Defence action

(D) Effect on reproduction

NEET 2020 · Q43

38. Bt cotton variety that was developed by the introduction of toxin gene of *Bacillus thuringiensis* (Bt) is resistant to:

(A) Insect pests

(B) Fungal diseases

(C) Plant nematodes

(D) Insect predators

NEET 2020 · Q44

39. Which of the following refer to correct example(s) of organisms which have evolved due to changes in environment brought about by anthropogenic action?

- (a) Darwin's Finches of Galapagos islands.**
- (b) Herbicide resistant weeds.**
- (c) Drug resistant eukaryotes.**
- (d) Man-created breeds of domesticated animals like dogs.**

- (A) only (a)
- (B) (a) and (c)
- (C) (b), (c) and (d)
- (D) only (d)

NEET 2020 · Q45

40. Identify the wrong statement with reference to immunity.

- (A) When exposed to antigen (living or dead) antibodies are produced in the host's body. It is called "Active immunity".
- (B) When ready-made antibodies are directly given, it is called "Passive immunity".
- (C) Active immunity is quick and gives full response.
- (D) Foetus receives some antibodies from mother, it is an example for passive immunity.

NEET 2020 · Q46

41. By which method was a new breed 'Hisardale' of sheep formed by using Bikaneri ewes and Marino rams?

- (A) Out crossing
- (B) Mutational breeding
- (C) Cross breeding
- (D) Inbreeding

NEET 2020 · Q47

42. Identify the correct statement with reference to human digestive system.

- (A) Ileum opens into small intestine.
- (B) Serosa is the innermost layer of the alimentary canal.
- (C) Ileum is a highly coiled part.
- (D) Vermiform appendix arises from duodenum.

NEET 2020 · Q48

43. Match the following columns and select the correct option.

Column - I | Column - II

- (a) Clostridium butylicum | (i) Cyclosporin-A**
- (b) Trichoderma polysporum | (ii) Butyric Acid**
- (c) Monascus purpureus | (iii) Citric Acid**
- (d) Aspergillus niger | (iv) Blood cholesterol lowering agent**

- (A) (a)-iii, (b)-iv, (c)-ii, (d)-i
- (B) (a)-ii, (b)-i, (c)-iv, (d)-iii
- (C) (a)-i, (b)-ii, (c)-iv, (d)-iii
- (D) (a)-iv, (b)-iii, (c)-ii, (d)-i

NEET 2020 · Q49

44. Presence of which of the following conditions in urine are indicative of Diabetes Mellitus?

- (A) Uremia and Ketonuria
- (B) Uremia and Renal Calculi
- (C) Ketonuria and Glycosuria
- (D) Renal calculi and Hyperglycaemia

NEET 2020 · Q50

45. Floridean starch has structure similar to:

- (A) Starch and cellulose
- (B) Amylopectin and glycogen
- (C) Mannitol and algin
- (D) Laminarin and cellulose

NEET 2020 · Q51

46. Select the option including all sexually transmitted diseases.

- (A) Gonorrhoea, Syphilis, Genital herpes
- (B) Gonorrhoea, Malaria, Genital herpes
- (C) AIDS, Malaria, Filaria
- (D) Cancer, AIDS, Syphilis

NEET 2020 · Q52

47. Match the following with respect to meiosis:

(a) Zygotene | (i) Terminalization

(b) Pachytene | (ii) Chiasmata

(c) Diplotene | (iii) Crossing over

(d) Diakinesis | (iv) Synapsis

Select the correct option from the following:

- (A) (a)-iii, (b)-iv, (c)-i, (d)-ii
- (B) (a)-iv, (b)-iii, (c)-ii, (d)-i
- (C) (a)-i, (b)-ii, (c)-iv, (d)-iii
- (D) (a)-ii, (b)-iv, (c)-iii, (d)-i

NEET 2020 · Q53

48. Which of the following pairs is of unicellular algae?

- (A) Laminaria and Sargassum
- (B) Gelidium and Gracilaria
- (C) Anabaena and Volvox
- (D) Chlorella and Spirulina

NEET 2020 · Q55

49. Match the following columns and select the correct option.

Column - I | Column - II

(a) Bt cotton | (i) Gene therapy

(b) Adenosine deaminase deficiency | (ii) Cellular defence

(c) RNAi | (iii) Detection of HIV infection

(d) PCR | (iv) Bacillus thuringiensis

- (A) (a)-iv, (b)-i, (c)-ii, (d)-iii
- (B) (a)-iii, (b)-ii, (c)-i, (d)-iv
- (C) (a)-ii, (b)-iii, (c)-iv, (d)-i
- (D) (a)-i, (b)-ii, (c)-iii, (d)-iv

NEET 2020 · Q56

50. Montreal protocol was signed in 1987 for control of:

- (A) Transport of Genetically modified organisms from one country to another
- (B) Emission of ozone depleting substances
- (C) Release of Green House gases
- (D) Disposal of e-wastes

NEET 2020 · Q57

51. Which of the following is correct about viroids?

- (A) They have RNA with protein coat.
- (B) They have free RNA without protein coat.
- (C) They have DNA with protein coat.
- (D) They have free DNA without protein coat.

NEET 2020 · Q58

52. The ovary is half inferior in:

- (A) Brinjal
- (B) Mustard
- (C) Sunflower
- (D) Plum

NEET 2020 · Q59

53. The enzyme enterokinase helps in conversion of:

- (A) protein into polypeptides
- (B) trypsinogen into trypsin
- (C) caseinogen into casein
- (D) pepsinogen into pepsin

NEET 2020 · Q60

54. Match the trophic levels with their correct species examples in grassland ecosystem.

- (a) Fourth trophic level | (i) Crow**
- (b) Second trophic level | (ii) Vulture**
- (c) First trophic level | (iii) Rabbit**
- (d) Third trophic level | (iv) Grass**

Select the correct option:

- (A) (a)-ii, (b)-iii, (c)-iv, (d)-i
- (B) (a)-iii, (b)-ii, (c)-i, (d)-iv
- (C) (a)-iv, (b)-iii, (c)-ii, (d)-i
- (D) (a)-i, (b)-ii, (c)-iii, (d)-iv

NEET 2020 · Q61

55. How many true breeding pea plant varieties did Mendel select as pairs, which were similar except in one character with contrasting traits?

- (A) 4
- (B) 2
- (C) 14
- (D) 8

NEET 2020 · Q62

56. Match the following columns and select the correct option.

Column - I | Column - II

- (a) Organ of Corti | (i) Connects middle ear and pharynx**
- (b) Cochlea | (ii) Coiled part of the labyrinth**
- (c) Eustachian tube | (iii) Attached to the oval window**
- (d) Stapes | (iv) Located on the basilar membrane**

- (A) (a)-ii, (b)-iii, (c)-i, (d)-iv
- (B) (a)-iii, (b)-i, (c)-iv, (d)-ii
- (C) (a)-iv, (b)-ii, (c)-i, (d)-iii
- (D) (a)-i, (b)-ii, (c)-iv, (d)-iii

NEET 2020 · Q63

57. In water hyacinth and water lily, pollination takes place by:

- (A) insects or wind
- (B) water currents only
- (C) wind and water
- (D) insects and water

NEET 2020 · Q64

58. Name the plant growth regulator which upon spraying on sugarcane crop, increases the length of stem, thus increasing the yield of sugarcane crop.

- (A) Cytokinin
- (B) Gibberellin
- (C) Ethylene
- (D) Abscissic acid

NEET 2020 · Q65

59. In light reaction, plastoquinone facilitates the transfer of electrons from:

- (A) PS-II to Cytb₆f complex
- (B) Cytb₆f complex to PS-I
- (C) PS-I to NADP⁺
- (D) PS-I to ATP synthase

NEET 2020 · Q66

60. Which of the following is not an inhibitory substance governing seed dormancy?

- (A) Gibberellic acid
- (B) Abscissic acid
- (C) Phenolic acid
- (D) Para-ascorbic acid

NEET 2020 · Q67

61. Name the enzyme that facilitates opening of DNA helix during transcription.

- (A) DNA ligase
- (B) DNA helicase
- (C) DNA polymerase
- (D) RNA polymerase

NEET 2020 · Q68

62. Which of the following would help in prevention of diuresis?

- (A) More water reabsorption due to undersecretion of ADH
- (B) Reabsorption of Na⁺ and water from renal tubules due to aldosterone
- (C) Atrial natriuretic factor causes vasoconstriction
- (D) Decrease in secretion of renin by JG cells

NEET 2020 · Q69

63. In relation to Gross primary productivity and Net primary productivity of an ecosystem, which one of the following statements is correct?

- (A) Gross primary productivity is always less than net primary productivity.
- (B) Gross primary productivity is always more than net primary productivity.
- (C) Gross primary productivity and Net primary productivity are one and same.
- (D) There is no relationship between Gross primary productivity and Net primary productivity.

NEET 2020 · Q70

64. Match the following columns and select the correct option.

Column - I | Column - II

(a) Placenta | (i) Androgens

(b) Zona pellucida | (ii) Human Chorionic Gonadotropin (hCG)

(c) Bulbo-urethral glands | (iii) Layer of the ovum

(d) Leydig cells | (iv) Lubrication of the Penis

- (A) (a)-iv, (b)-iii, (c)-i, (d)-ii
- (B) (a)-i, (b)-iv, (c)-ii, (d)-iii
- (C) (a)-iii, (b)-ii, (c)-iv, (d)-i
- (D) (a)-ii, (b)-iii, (c)-iv, (d)-i

NEET 2020 · Q71

65. Strobili or cones are found in:

- (A) Salvinia
- (B) Pteris
- (C) Marchantia
- (D) Equisetum

NEET 2020 · Q73

66. Flippers of Penguins and Dolphins are examples of:

- (A) Adaptive radiation
- (B) Convergent evolution
- (C) Industrial melanism
- (D) Natural selection

NEET 2020 · Q74

67. If the distance between two consecutive base pairs is 0.34 nm and the total number of base pairs of a DNA double helix in a typical mammalian cell is 6.6×10^9 bp, then the length of the DNA is approximately:

- (A) 2.0 meters
- (B) 2.5 meters
- (C) 2.2 meters
- (D) 2.7 meters

NEET 2020 · Q75

68. The QRS complex in a standard ECG represents:

- (A) Repolarisation of auricles
- (B) Depolarisation of auricles
- (C) Depolarisation of ventricles
- (D) Repolarisation of ventricles

NEET 2020 · Q76

69. Match the following columns and select the correct option.

Column - I | Column - II

(a) Eosinophils | (i) Immune response

(b) Basophils | (ii) Phagocytosis

(c) Neutrophils | (iii) Release histaminase, destructive enzymes

(d) Lymphocytes | (iv) Release granules containing histamine

- (A) (a)-iii, (b)-iv, (c)-ii, (d)-i
- (B) (a)-iv, (b)-i, (c)-ii, (d)-iii
- (C) (a)-i, (b)-ii, (c)-iv, (d)-iii
- (D) (a)-ii, (b)-i, (c)-iii, (d)-iv

NEET 2020 · Q77

70. Which of the following statements is correct?

- (A) Adenine pairs with thymine through two H-bonds.
- (B) Adenine pairs with thymine through one H-bond.
- (C) Adenine pairs with thymine through three H-bonds.
- (D) Adenine does not pair with thymine.

NEET 2020 · Q78

71. The sequence that controls the copy number of the linked DNA in the vector, is termed:

- (A) Selectable marker
- (B) Ori site
- (C) Palindromic sequence
- (D) Recognition site

NEET 2020 · Q79

72. Identify the basic amino acid from the following.

- (A) Tyrosine
- (B) Glutamic Acid
- (C) Lysine
- (D) Valine

NEET 2020 · Q80

73. Match the following columns and select the correct option.

Column - I | Column - II

(a) Pituitary gland | (i) Grave's disease

(b) Thyroid gland | (ii) Diabetes mellitus

(c) Adrenal gland | (iii) Diabetes insipidus

(d) Pancreas | (iv) Addison's disease

- (A) (a)-iv, (b)-iii, (c)-i, (d)-ii
- (B) (a)-iii, (b)-ii, (c)-i, (d)-iv
- (C) (a)-iii, (b)-i, (c)-iv, (d)-ii
- (D) (a)-ii, (b)-i, (c)-iv, (d)-iii

NEET 2020 · Q81

74. Select the correct statement.

- (A) Glucocorticoids stimulate gluconeogenesis.
- (B) Glucagon is associated with hypoglycemia.
- (C) Insulin acts on pancreatic cells and adipocytes.
- (D) Insulin is associated with hyperglycemia.

NEET 2020 · Q82

75. Which one of the following is the most abundant protein in the animals?

- (A) Haemoglobin
- (B) Collagen
- (C) Lectin
- (D) Insulin

NEET 2020 · Q83

76. Experimental verification of the chromosomal theory of inheritance was done by:

- (A) Mendel
- (B) Sutton
- (C) Boveri
- (D) Morgan

NEET 2020 · Q84

77. Match the following columns and select the correct option.

Column - I | Column - II

(a) Floating Ribs | (i) Located between second and seventh ribs

(b) Acromion | (ii) Head of the Humerus

(c) Scapula | (iii) Clavicle

(d) Glenoid cavity | (iv) Do not connect with the sternum

- (A) (a)-ii, (b)-iv, (c)-i, (d)-iii
- (B) (a)-i, (b)-iii, (c)-ii, (d)-iv
- (C) (a)-iii, (b)-ii, (c)-iv, (d)-i
- (D) (a)-iv, (b)-iii, (c)-i, (d)-ii

NEET 2020 · Q85

78. The number of substrate level phosphorylations in one turn of citric acid cycle is:

- (A) Zero
- (B) One
- (C) Two
- (D) Three

NEET 2020 · Q86

79. Dissolution of the synaptonemal complex occurs during:

- (A) Pachytene
- (B) Zygotene
- (C) Diplotene
- (D) Leptotene

NEET 2020 · Q87

80. Bilaterally symmetrical and acoelomate animals are exemplified by:

- (A) Ctenophora
- (B) Platyhelminthes
- (C) Aschelminthes
- (D) Annelida

NEET 2020 · Q88

81. The body of the ovule is fused within the funicle at:

- (A) Hilum
- (B) Micropyle
- (C) Nucellus
- (D) Chalaza

NEET 2020 · Q89

82. Goblet cells of alimentary canal are modified from:

- (A) Squamous epithelial cells
- (B) Columnar epithelial cells
- (C) Chondrocytes
- (D) Compound epithelial cells

NEET 2020 · Q90

83. Snow-blindness in Antarctic region is due to:

- (A) Freezing of fluids in the eye by low temperature
- (B) Inflammation of cornea due to high dose of UV-B radiation
- (C) High reflection of light from snow
- (D) Damage to retina caused by infra-red rays

Answer key and explanations

1. Answer: (D) Species interaction

Sex ratio, natality and mortality are attributes of a population as a group, not of single individuals. Species interaction (predation, competition, mutualism) describes how different species affect each other, so it is a feature of the community, not an attribute of one population.

2. Answer: (A) Log phase

In the sigmoid growth curve the log (exponential) phase shows the fastest growth because all the cells keep dividing. Growth is slow in the lag phase, slows and stops at senescence, and is suspended during dormancy.

3. Answer: (A) Fibrous roots

In monocots the primary root is short-lived and is replaced by many roots that arise from the base of the stem, forming the fibrous root system. Prop roots are adventitious roots that hang down from the branches (as in banyan), not from the stem base.

4. Answer: (B) (a)-iii, (b)-iv, (c)-i, (d)-ii

Typhoid is caused by *Salmonella typhi*, pneumonia by *Haemophilus influenzae* (and *Streptococcus pneumoniae*), filariasis by *Wuchereria* and malaria by *Plasmodium*. Only the option pairing these as *Salmonella*, *Haemophilus*, *Wuchereria*, *Plasmodium* is correct.

5. Answer: (A) ZIFT and IUT

In ZIFT the zygote or early embryo (up to 8 blastomeres) is put into the fallopian tube, and in IUT an embryo with more than 8 blastomeres is put into the uterus, so both transfer embryos. GIFT transfers an ovum (gamete), and ICSI injects a sperm into the ovum in the laboratory, so they are not embryo transfers.

6. Answer: (C) When I^A and I^B are present together, they express same type of sugar.

I^A and I^B are codominant: each adds a different sugar to the plasma membrane, so a person with both shows both A and B antigens (blood group AB). The other statements are correct: gene I has three alleles, a diploid person carries any two of them, and allele i adds no sugar.

7. Answer: (A) Ligases - Join the two DNA molecules

DNA ligase joins DNA fragments, for example sealing a gene into a vector. Polymerases synthesise DNA rather than break it, nucleases break phosphodiester bonds rather than separate strands, and it is endonucleases, not exonucleases, that cut at specific positions within the DNA.

8. Answer: (C) Sickle cell anaemia - Autosomal recessive trait, chromosome-11

Sickle cell anaemia is an autosomal recessive disorder due to a mutation in the beta-globin gene on chromosome 11. Haemophilia is X-linked recessive, phenylketonuria is autosomal recessive and thalassemia is autosomal recessive, so those pairs are wrong.

9. Answer: (B) (a)-iv, (b)-i, (c)-ii, (d)-iii

Locusta is the gregarious, polyphagous pest; Asterias (an echinoderm) has radially symmetrical adults but bilaterally symmetrical larvae; scorpions breathe by book lungs; and the ctenophore Ctenoplane is bioluminescent. Hence Locusta, Asterias, Scorpion, Ctenoplane is the correct order.

10. Answer: (B) Sporozoites

The female Anopheles mosquito injects sporozoites into human blood when it bites, and these first multiply in liver cells. Trophozoites are stages inside red blood cells, and gametocytes form in human blood and are taken up by the mosquito.

11. Answer: (D) Inulin, insulin

Inulin is a polymer of fructose units linked by glycosidic bonds, and insulin is a protein whose amino acids are linked by peptide bonds. Cholesterol is a steroid with neither bond, glycerol is a simple alcohol, and lecithin is a phospholipid, so the other pairs fail.

12. Answer: (C) Cell is metabolically active, grows but does not replicate its DNA.

G₁ is the interval between mitosis and the start of DNA replication: the cell is metabolically active and keeps growing but does not copy its DNA. DNA replication happens in S phase and nuclear division in M phase.

13. Answer: (C) proximal convoluted tubule of nephron

Cuboidal epithelium bearing a brush border of microvilli lines the proximal convoluted tubule of the nephron, where it increases the surface for reabsorption. The intestine is lined by columnar epithelium with microvilli, salivary gland ducts by plain cuboidal epithelium, and the eustachian tube by ciliated epithelium.

14. Answer: (B) These are involved in ingestion of food particles.

Inclusion bodies are reserve materials such as phosphate granules, cyanophycean granules and glycogen granules lying free in the prokaryotic cytoplasm without any membrane. They play no part in ingesting food, which is the wrong statement.

15. Answer: (C) Golgi bodies

The Golgi apparatus is the main site where glycoproteins and glycolipids are formed, as it adds sugars to proteins and lipids received from the ER. The ER makes and folds proteins and lipids, while peroxisomes and polysomes do not do this.

16. Answer: (B) Ethidium bromide in UV radiation

After gel electrophoresis the DNA is stained with ethidium bromide and seen as bright orange bands under UV light. Acetocarmine is a chromosome stain used in light microscopy, and ethidium bromide does not fluoresce usefully under infrared.

17. Answer: (C) Higher H⁺ conc. in alveoli favours the formation of oxyhaemoglobin.

In the alveoli the conditions that favour oxyhaemoglobin formation are high pO₂, low pCO₂, lower H⁺ concentration and lower temperature. A higher H⁺ concentration favours release of oxygen (as in the tissues), so that statement is wrong.

18. Answer: (A) Inferior ovary

Ray florets of sunflower (Asteraceae) are epigynous: the ovary is fused with the thalamus and the other floral parts arise above it, so the ovary is inferior. Superior (hypogynous) or half-inferior ovaries are not found in this family.

19. Answer: (A) 5'-GAATTC-3' / 3'-CTTAAG-5'

EcoRI recognises the palindrome 5'-GAATTC-3' paired with 3'-CTTAAG-5', which reads the same on both strands in the 5'→3' direction. GGATCC is the BamHI site, and writing CTTAAG as the top 5'→3' strand is not the EcoRI site.

20. Answer: (D) Activated sludge

After secondary treatment the floc settles as activated sludge; a small part is sent back to the aeration tank as inoculum and the major part goes into anaerobic sludge digesters. Primary sludge and floating debris are removed earlier, and the primary effluent goes to the aeration tank, not to the digester.

21. Answer: (A) (a) and (b)

Inspiration starts when the diaphragm and the external intercostal muscles contract, which increases the volume of the thoracic cavity and the lungs. The larger pulmonary volume lowers intra-pulmonary pressure below atmospheric, so a decrease in volume and an increase in pressure belong to expiration.

22. Answer: (C) the head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body.

In cockroach only a small part of the nervous system (the supra-oesophageal ganglia, or brain) is in the head; the rest, a ventral nerve cord with segmental ganglia, runs along the ventral side of the body. So a headless cockroach can survive for a few days, whereas the nervous system is not dorsal and the brain is not in the abdomen.

23. Answer: (D) (b) and (c)

In vertebrates the notochord is present only in the embryo and is replaced by the vertebral column, and all chordates have a dorsal, hollow nerve cord, so those two statements are true. In urochordates the notochord is only in the larval tail, and the three subphyla are Urochordata, Cephalochordata and Vertebrata, since Hemichordata is now a separate phylum.

24. Answer: (B) (a)-iv, (b)-iii, (c)-i, (d)-ii

Bacillus thuringiensis gives cry proteins, Thermus aquaticus gives the thermostable Taq DNA polymerase, Agrobacterium tumefaciens (Ti plasmid) is used as a cloning vector, and a plasmid of Salmonella typhimurium was used to make the first rDNA molecule. Hence cry proteins, DNA polymerase, cloning vector, first rDNA is the correct order.

25. Answer: (C) (a)-iii, (b)-iv, (c)-ii, (d)-i

Iron is needed for chlorophyll biosynthesis (and in ferredoxin and cytochromes), zinc for synthesis of auxin (IAA), boron for pollen germination, and manganese for the splitting of water in photosynthesis. Pairing iron with pollen germination or zinc with photolysis is wrong.

26. Answer: (C) Sapwood is the innermost secondary xylem and is lighter in colour.

Sapwood is the outer, lighter-coloured, functional secondary xylem that conducts water, while heartwood is the inner, dark, non-conducting wood. Calling sapwood the innermost secondary xylem is therefore wrong; the other three statements are correct.

27. Answer: (A) (a)-ii, (b)-iv, (c)-iii, (d)-i

Malonate is a competitive inhibitor of succinate dehydrogenase, collagen is a protein with peptide bonds, chitin is the fungal cell-wall material, and ricin is a toxin listed as a secondary metabolite. Hence malonate, collagen, chitin, ricin is correct.

28. Answer: (D) At the time of fusion of a sperm with an ovum

The secondary oocyte released at ovulation is held in meiosis II; entry of the sperm into the ovum triggers completion of this division, giving the ovum and the second polar body. So it is not completed before ovulation or at copulation, and it is finished before the zygote is formed.

29. Answer: (D) 7 million

Robert May's estimate of global species diversity is about 7 million. About 1.5 million is the number of species actually described, and 20 or 50 million are higher estimates by others, not his figure.

30. Answer: (D) Amazon forests

The tropical Amazon rainforest has the highest species diversity on Earth, for example over 40,000 species of plants and thousands of fishes, birds and insects. The Western Ghats, Madagascar and the Himalayas are rich hotspots but have fewer species than the Amazon.

31. Answer: (C) The functional insulin has A and B chains linked together by hydrogen bonds.

In mature insulin the A and B polypeptide chains are joined by disulphide bridges, not by hydrogen bonds. Insulin is indeed made as proinsulin with an extra C-peptide that is removed, and Eli Lilly made human insulin chains in E. coli in 1983.

32. Answer: (A) Monocotyledonous stem

Many scattered, conjoint and closed vascular bundles with bundle sheaths in a large parenchymatous ground tissue, and no phloem parenchyma, are the features of a monocot stem. A dicot stem has bundles in a ring, and roots have radial, not conjoint, vascular bundles.

33. Answer: (A) (a)-ii, (b)-iii, (c)-iv, (d)-i

Cyclostomes have 6-15 pairs of gill slits, Chondrichthyes have a heterocercal caudal fin, Osteichthyes have an air bladder, and Trygon (sting ray) has a poison sting. Hence Cyclostomes, Chondrichthyes, Osteichthyes, Trygon is correct.

34. Answer: (A) CH₄, H₂, NH₃ and water vapor at 800°C

Miller made amino acids by passing electric sparks through a closed flask of CH₄, H₂, NH₃ and water vapour at 800°C. CH₃ is a radical and NH₄ is not a gas, so those options are wrong, and the temperature used was 800°C, not 600°C.

35. Answer: (A) Karl Ernst von Baer

Ernst Haeckel argued that embryos of all vertebrates share features absent in adults, and Karl Ernst von Baer rejected this, noting that embryos never pass through the adult stages of other animals. Darwin and Wallace proposed natural selection, and Oparin worked on the origin of life.

36. Answer: (B) Root pressure

At night and early morning when transpiration is low, root pressure pushes water up and out through hydathodes at the leaf tips (guttation), as seen on grass blades. Transpiration loses water as vapour, and imbibition and plasmolysis do not move liquid water out of leaves.

37. Answer: (C) Defence action

Alkaloids such as nicotine, strychnine and caffeine are secondary metabolites that protect plants by making them toxic or unpalatable to herbivores. They have no nutritive role and are not growth or reproductive substances.

38. Answer: (A) Insect pests

The cry genes of *Bacillus thuringiensis* code for crystal proteins that kill insect larvae such as cotton bollworms, so Bt cotton resists insect pests. It gives no protection against fungi, and nematode resistance is made by RNA interference, not by Bt toxin.

39. Answer: (C) (b), (c) and (d)

Herbicide-resistant weeds, drug-resistant eukaryotes and man-made breeds of dogs all evolved because of human action (chemicals or artificial selection). Darwin's finches arose by natural adaptive radiation on the Galapagos, not through human activity.

40. Answer: (C) Active immunity is quick and gives full response.

Active immunity is slow and takes time to give its full response, because the body must make its own antibodies after meeting the antigen. Passive immunity, from ready-made antibodies such as those passing from mother to foetus, is the quick one.

41. Answer: (C) Cross breeding

Hisardale was made by cross-breeding Bikaneri ewes with Marino rams, that is mating superior animals of two different breeds to combine their qualities. Outcrossing is mating within the same breed with no common ancestor, and inbreeding is mating close relatives.

42. Answer: (C) Ileum is a highly coiled part.

The ileum is the highly coiled last part of the small intestine and opens into the large intestine. Serosa is the outermost layer of the gut wall, not the innermost (the mucosa), and the vermiform appendix arises from the caecum, not the duodenum.

43. Answer: (B) (a)-ii, (b)-i, (c)-iv, (d)-iii

Clostridium butylicum produces butyric acid, *Trichoderma polysporum* gives cyclosporin A, *Monascus purpureus* gives statins that lower blood cholesterol, and *Aspergillus niger* produces citric acid. Hence butyric acid, cyclosporin A, cholesterol-lowering agent, citric acid is correct.

44. Answer: (C) Ketonuria and Glycosuria

In diabetes mellitus excess glucose (glycosuria) and ketone bodies (ketonuria) appear in the urine. Uremia is accumulation of urea in blood seen in kidney failure, and renal calculi are kidney stones, so neither indicates diabetes.

45. Answer: (B) Amylopectin and glycogen

Floridean starch, the stored food of red algae, has a structure very similar to amylopectin and glycogen. Mannitol and laminarin are stored food of brown algae, and cellulose and algin are wall materials, not reserve food.

46. Answer: (A) Gonorrhoea, Syphilis, Genital herpes

Gonorrhoea, syphilis and genital herpes are all spread by sexual contact. Malaria and filariasis are spread by mosquitoes, and cancer is not an infectious disease, so the other groups each include a non-STD.

47. Answer: (B) (a)-iv, (b)-iii, (c)-ii, (d)-i

Synapsis of homologues occurs in zygotene, crossing over in pachytene, chiasmata become visible in diplotene, and terminalisation of chiasmata takes place in diakinesis. Hence synapsis, crossing over, chiasmata, terminalisation is correct.

48. Answer: (D) Chlorella and Spirulina

NCERT names Chlorella and Spirulina as unicellular, protein-rich algae used as food supplements.

Laminaria, Sargassum, Gelidium and Gracilaria are large multicellular algae, and Volvox is colonial.

49. Answer: (A) (a)-iv, (b)-i, (c)-ii, (d)-iii

Bt cotton carries genes from *Bacillus thuringiensis*, ADA deficiency was the first disease treated by gene therapy, RNA interference is a natural cellular defence against viruses and is used against nematodes, and PCR detects HIV in suspected AIDS patients. Hence *Bacillus thuringiensis*, gene therapy, cellular defence, HIV detection is correct.

50. Answer: (B) Emission of ozone depleting substances

The Montreal Protocol (1987) was signed to control the emission of ozone-depleting substances such as CFCs. Transboundary movement of GM organisms is covered by the Cartagena Protocol, and greenhouse gases by the Kyoto Protocol.

51. Answer: (B) They have free RNA without protein coat.

Viroids, found by T.O. Diener as the cause of potato spindle tuber disease, are free RNA molecules without any protein coat. Viruses have a protein coat, and viroid RNA is of low molecular weight, not DNA.

52. Answer: (D) Plum

In perigynous flowers such as plum, rose and peach the floral parts arise at the rim of the thalamus at about the level of the ovary, so the ovary is called half inferior. Brinjal and mustard have superior ovaries and sunflower an inferior ovary.

53. Answer: (B) trypsinogen into trypsin

Enterokinase, secreted by the intestinal mucosa, converts inactive trypsinogen into active trypsin, which then activates the other pancreatic proenzymes. Pepsinogen is activated by HCl, and caseinogen is changed to casein by rennin/pepsin.

54. Answer: (A) (a)-ii, (b)-iii, (c)-iv, (d)-i

In a grassland food chain grass is the producer (first level), rabbit the primary consumer (second), crow the secondary consumer (third), and vulture the top carnivore (fourth). Hence vulture, rabbit, grass, crow is correct.

55. Answer: (C) 14

Mendel chose 14 true-breeding pea varieties as 7 pairs, each pair differing in one character with contrasting traits. The trap is to answer 7, the number of characters, or 2, the number of traits per character.

56. Answer: (C) (a)-iv, (b)-ii, (c)-i, (d)-iii

The organ of Corti lies on the basilar membrane, the cochlea is the coiled part of the labyrinth, the eustachian tube connects the middle ear with the pharynx, and the stapes is attached to the oval window. Hence basilar membrane, coiled labyrinth, middle ear to pharynx, oval window is correct.

57. Answer: (A) insects or wind

In water hyacinth and water lily the flowers rise above the water surface and are pollinated by insects or wind, as in most land plants. Water pollination is limited to a few submerged genera such as *Vallisneria*, *Hydrilla* and *Zostera*.

58. Answer: (B) Gibberellin

Spraying gibberellins on sugarcane elongates the stem internodes, raising the yield by as much as 20 tonnes per acre. Cytokinins promote cell division, ethylene ripening and senescence, and ABA dormancy, so none of them lengthens the stem.

59. Answer: (A) PS-II to Cytb₆f complex

In the Z scheme the electron from PS II goes to plastoquinone, a mobile carrier that passes it to the cytochrome b₆f complex; plastocyanin then carries it on to PS I. Reduction of NADP⁺ happens after PS I, through ferredoxin, not plastoquinone.

60. Answer: (A) Gibberellic acid

Gibberellic acid breaks seed dormancy and promotes germination, so it is not an inhibitor. Absciscic acid, phenolic acids and para-ascorbic acid are the inhibitors that keep seeds dormant.

61. Answer: (D) RNA polymerase

In transcription RNA polymerase itself opens the DNA helix and elongates the RNA, with no separate helicase needed. DNA helicase opens the helix in replication, and DNA ligase and DNA polymerase are replication enzymes.

62. Answer: (B) Reabsorption of Na⁺ and water from renal tubules due to aldosterone

Aldosterone causes reabsorption of Na⁺ and water from the distal parts of the tubule, which reduces urine output and prevents diuresis. Under-secretion of ADH reduces water reabsorption and causes diuresis, ANF causes vasodilation and opposes the renin-angiotensin system, and less renin means less aldosterone.

63. Answer: (B) Gross primary productivity is always more than net primary productivity.

$NPP = GPP - R$, where R is the energy used in respiration by the producers, so GPP is always greater than NPP. GPP cannot be less than or equal to NPP, because respiration losses are always present.

64. Answer: (D) (a)-ii, (b)-iii, (c)-iv, (d)-i

The placenta secretes hCG, the zona pellucida is a layer around the ovum, bulbourethral gland secretions lubricate the penis, and Leydig cells secrete androgens. Hence hCG, layer of the ovum, lubrication, androgens is correct.

65. Answer: (D) Equisetum

In Equisetum (and Selaginella) the sporophylls are packed into compact strobili or cones. Salvinia bears spores in sporocarps, Pteris has sori on the leaf margin, and Marchantia is a liverwort whose sporophyte has no cones.

66. Answer: (B) Convergent evolution

Penguin flippers (bird wing) and dolphin flippers (mammal forelimb) have similar function and shape but come from different lineages, an example of convergent evolution (analogy). Adaptive radiation is divergence from a common ancestor, and industrial melanism is a case of natural selection in moths.

67. Answer: (C) 2.2 meters

$\text{Length} = \text{number of base pairs} \times \text{distance per base pair} = 6.6 \times 10^9 \times 0.34 \times 10^{-9} \text{ m} = 2.244 \text{ m}$, which is about 2.2 m. The values 2.0, 2.5 and 2.7 m do not match the product.

68. Answer: (C) Depolarisation of ventricles

The QRS complex marks depolarisation of the ventricles, which starts ventricular contraction. The P wave is atrial depolarisation, the T wave is ventricular repolarisation, and atrial repolarisation is hidden in the QRS and has no separate wave.

69. Answer: (A) (a)-iii, (b)-iv, (c)-ii, (d)-i

Eosinophils resist infection and are linked to allergy (release of histaminase and destructive enzymes), basophils release granules with histamine, serotonin and heparin, neutrophils are phagocytic, and lymphocytes carry out immune responses. Hence histaminase, histamine, phagocytosis, immune response is correct.

70. Answer: (A) Adenine pairs with thymine through two H-bonds.

Adenine pairs with thymine through two hydrogen bonds, while guanine pairs with cytosine through three. A-T pairing is the basis of Chargaff's rule, so it never pairs through one or three bonds and does pair with thymine.

71. Answer: (B) Ori site

The origin of replication (ori) is where replication starts, and it also controls the copy number of the linked DNA in the vector. Selectable markers help pick transformants, and palindromic and recognition sequences are restriction enzyme sites.

72. Answer: (C) Lysine

Lysine has an extra amino group in its R group, making it a basic amino acid. Glutamic acid is acidic, while tyrosine (aromatic) and valine are neutral.

73. Answer: (C) (a)-iii, (b)-i, (c)-iv, (d)-ii

Low ADH from the pituitary causes diabetes insipidus, hyperthyroidism causes Graves' disease, low adrenal cortex hormones cause Addison's disease, and insulin deficiency from the pancreas causes diabetes mellitus. Hence diabetes insipidus, Graves' disease, Addison's disease, diabetes mellitus is correct.

74. Answer: (A) Glucocorticoids stimulate gluconeogenesis.

Glucocorticoids such as cortisol stimulate gluconeogenesis, lipolysis and proteolysis, raising blood glucose. Glucagon causes hyperglycaemia, insulin causes hypoglycaemia, and insulin acts mainly on liver cells and adipocytes, not on pancreatic cells.

75. Answer: (B) Collagen

Collagen is the most abundant protein in the animal world. RuBisCO is the most abundant protein in the whole biosphere, and haemoglobin, lectin and insulin are present in far smaller amounts.

76. Answer: (D) Morgan

Thomas Hunt Morgan's work on *Drosophila* gave the experimental verification of the chromosomal theory of inheritance. Sutton and Boveri proposed the theory, and Mendel worked before chromosomes were linked to heredity.

77. Answer: (D) (a)-iv, (b)-iii, (c)-i, (d)-ii

Floating ribs (11th and 12th pairs) do not connect with the sternum, the acromion process of the scapula meets the clavicle, the scapula lies between the second and seventh ribs, and the glenoid cavity receives the head of the humerus. Hence not joined to sternum, clavicle, between second and seventh ribs, head of humerus is correct.

78. Answer: (B) One

In one turn of the Krebs cycle only one substrate-level phosphorylation occurs: succinyl-CoA is converted to succinic acid with formation of one GTP (or ATP). The other ATP comes from oxidative phosphorylation of NADH and FADH₂, so zero, two or three are wrong.

79. Answer: (C) Diplotene

In diplotene the synaptonemal complex formed in zygotene dissolves and the homologues start to separate, except at the chiasmata. It forms in zygotene, is present through pachytene, and has not formed in leptotene.

80. Answer: (B) Platyhelminthes

Flatworms (Platyhelminthes) are bilaterally symmetrical and acoelomate. Ctenophores are radially symmetrical, Aschelminthes are pseudocoelomate, and annelids are true coelomates.

81. Answer: (A) Hilum

The hilum is the point where the body of the ovule is fused with the funicle (stalk). The micropyle is the opening at the tip of the integuments, the chalaza is the base opposite the micropyle, and the nucellus is the tissue inside the integuments.

82. Answer: (B) Columnar epithelial cells

Goblet cells, which secrete mucus in the alimentary canal, are modified columnar epithelial cells. Squamous cells are flat lining cells, compound epithelium is protective, and chondrocytes are cartilage cells.

83. Answer: (B) Inflammation of cornea due to high dose of UV-B radiation

A high dose of UV-B, made worse by ozone depletion over Antarctica, causes inflammation of the cornea called snow-blindness. Glare from snow alone or freezing of eye fluids is not the cause, and infrared rays do not cause it.

Questions as set in the AIPMT/NEET papers conducted by CBSE and NTA. Answers checked and explanations written by the RankUp team. RankUp is not affiliated with CBSE or NTA.