

Year
2019

NEET Biology Solved Paper

1. Which of the following statements is incorrect?

- (a) Viroids lack a protein coat.
- (b) Viruses are obligate parasites.
- (c) Infective constituent in viruses is the protein coat.
- (d) Prions consist of abnormally folded proteins.

Ans.: (c)

2. Purines found, both in the DNA and the RNA, are:

- (a) Adenine and thymine
- (b) Adenine and guanine
- (c) Guanine and cytosine
- (d) Cytosine and thymine

Ans.: (b)

3. Which of the following glucose transporters is insulin-dependent?

- (a) GLUT I (b) GLUT II
- (c) GLUT III (d) GLUT IV

Ans.: (d)

4. Identify the cells whose secretion protects the lining of gastro-intestinal tract from various enzymes.

- (a) Chief Cells (b) Goblet Cells
- (c) Oxyntic Cells (d) Duodenal Cells

Ans.: (b)

5. Which one of the following equipment is essentially required for growing microbes on a large scale, for industrial production of enzymes?

- (a) BOD incubator
- (b) Sludge digester
- (c) Industrial oven
- (d) Bioreactor

Ans.: (d)

6. Which of the following is true for the Golden rice?

- (a) It is Vitamin A enriched, with a gene from daffodil
- (b) It is pest resistant, with a gene from *Bacillus thuringiensis*
- (c) It is drought tolerant, developed using *Agrobacterium* vector
- (d) It has yellow grains, because of a gene introduced from a primitive variety of rice

Ans.: (a)

7. Which one of the following methods is not a method of *in situ* conservation of biodiversity?

- (a) Biosphere Reserve
- (b) Wildlife Sanctuary
- (c) Botanical Garden
- (d) Sacred Grove

Ans.: (c)

8. Under which of the following conditions, will there be no change in the reading frame of following mRNA?

5'AACAGCGGUGCUAUU3'

- (a) Insertion of G at 5th position
- (b) Deletion of G from 5th position

- (c) Insertion of A at G at 4th and 5th positions respectively
 (d) Deletion of GGU from 7th, 8th and 9th positions

Ans.: (d)

9. Which of these following methods is most suitable for the disposal of nuclear waste?

- (a) Shoot the waste into space
 (b) Bury the waste under Antarctic ice-cover
 (c) Dump the waste within rocks under deep ocean
 (d) Bury the waste within rocks deep below the Earth's surface

Ans.: (d)

10. Match the following organisms with the products they produce:

- | | |
|------------------------------|-------------------|
| (A) Lactobacillus | (i) Cheese |
| (B) Saccharomyces cerevisiae | (ii) Curd |
| (C) Aspergillus niger | (iii) Citric Acid |
| (D) Acetobacter aceti | (iv) Bread |
| | (v) Acetic Acid |

Select the correct option:

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

Ans.: (b)

11. What map unit (Centimorgan) is adopted in the construction of genetic maps?

- (a) A unit of distance between two expressed genes, representing 10% crossover
 (b) A unit of distance between two expressed genes, representing 100% crossover

- (c) A unit of distance between genes on chromosomes, representing 1% crossover

- (d) A unit of distance between genes on chromosomes, representing 50% crossover

Ans.: (c)

12. Select the hormone-releasing Intra-uterine Devices?

- (a) Vaults, LNG-20
 (b) Multiload 375, Progestasert
 (c) Progestasert, LNG-20
 (d) Lippes Loop, Multiload 375

Ans.: (c)

13. Which of the following can be used as a biocontrol agent in the treatment of plant disease?

- (a) Trichoderma (b) Chlorella
 (c) Anabaena (d) Lactobacillus

Ans.: (a)

14. Expressed Sequence Tapes (ESTs) refers to:

- (a) Genes expressed as RNA
 (b) Polypeptide expression
 (c) DNA polymorphism
 (d) Novel DNA sequences

Ans.: (a)

15. Colostrum, the yellowish fluid, secreted by mother during the initial days of lactation is very essential to impart immunity to the newborn infants because it contains:

- (a) Natural killer cells
 (b) Monocytes
 (c) Macrophages
 (d) Immunoglobulin A

Ans.: (d)

16. Select the incorrect statement:

- (a) Inbreeding increases homozygosity
 (b) Inbreeding is essential to evolve purelines in any animal

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- (c) Inbreeding selects harmful recessive genes that reduce fertility and productivity
- (d) Inbreeding helps in accumulation of superior genes elimination of undesirable genes

Ans.: (c)

17. Select the correct sequence of the transport of sperm cells in the male reproductive system:

- (a) Testis → Epididymis → Vasa efferentia → Rete testis → Inguinal canal → Urethra
- (b) Seminiferous tubules → Rete testis → Vasa efferentia → Epididymis → Vas deferens → Ejaculatory duct → Urethra → Urethral meatus
- (c) Seminiferous tubules → Vasa efferentia → Epididymis → Inguinal canal → Urethra
- (d) Testis → Epididymis → Vasa efferentia → Vas deferens → Ejaculatory duct → Inguinal canal → Urethra → Urethral meatus

Ans.: (b)

18. A gene locus has two alleles A, a. If the frequency of dominant allele A is 0.4 then what will be the frequency of homozygous dominant, heterozygous and homozygous recessive individuals in the population?

- (a) 0.36 (AA); 0.48 (Aa); 0.16 (aa)
- (b) 0.16 (AA); 0.24 (Aa); 0.36 (aa)
- (c) 0.16 (AA); 0.48 (Aa); 0.36 (aa)
- (d) 0.16 (AA); 0.36 (Aa); 0.48 (aa)

Ans.: (c)

19. The shorter and longer arms of a submetacentric chromosome are referred to as:

- (a) s-arm and l-arm respectively
- (b) p-arm and q-arm respectively

- (c) q-arm and p-arm respectively
- (d) m-arm and n-arm respectively

Ans.: (b)

20. Match the following organisms with their respective characteristics:

- | | |
|--------------------------|-------------------------|
| (A) <i>Pila</i> | (i) Flame cells |
| (B) <i>Bombyx</i> | (ii) Comb plates |
| (C) <i>Pleurobrachia</i> | (iii) Radula |
| (D) <i>Taenia</i> | (iv) Malpighian tubules |

Select the correct option from the following:

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

Ans.: (b)

21. What is the site of perception of photoperiod necessary for induction of flowering in plants?

- (a) Lateral buds
- (b) Pulvinus
- (c) Shoot apex
- (d) Leaves

Ans.: (d)

22. Which part of the brain is responsible for thermoregulation?

- (a) Cerebrum
- (b) Hypothalamus
- (c) Corpus callosum
- (d) Medulla oblongata

Ans.: (b)

23. Which of the following pair of organelles does not contain DNA?

- (a) Mitochondria and Lysosomes
- (b) Chloroplast and Vacuoles
- (c) Lysosomes and Vacuoles
- (d) Nuclear envelope and Mitochondria

Ans.: (c)

24. What is the genetic disorder in which an individual has an overall masculine development, gynaecomastia, and is sterile?
- (a) Turner's syndrome
 - (b) Klinefelter's syndrome
 - (c) Edward syndrome
 - (d) Down's syndrome

Ans.: (d)

25. Xylem translocates:
- (a) Water only
 - (b) Water and mineral salts only
 - (c) Water, mineral salts and some organic nitrogen only
 - (d) Water, mineral salts, some organic nitrogen and hormones

Ans.: (d)

26. Which of the following pairs of gases is mainly responsible for greenhouse effect?
- (a) Ozone and Ammonia
 - (b) Oxygen and Nitrogen
 - (c) Nitrogen and Sulphur dioxide
 - (d) Carbon dioxide and Methane

Ans.: (d)

27. Which of the following protocols did aim for reducing emission of chlorofluorocarbons into the atmosphere?
- (a) Montreal Protocol
 - (b) Kyoto Protocol
 - (c) Gothenburg Protocol
 - (d) Geneva Protocol

Ans.: (a)

28. In some plants, the female gamete develops into embryo without fertilization. This phenomenon is known as:
- (a) Autogamy
 - (b) Parthenocarpy
 - (c) Syngamy
 - (d) Parthenogenesis

Ans.: (d)

29. Which of the following sexually transmitted diseases is not completely curable?
- (a) Gonorrhoea
 - (b) Genital warts
 - (c) Genital herpes
 - (d) Chlamydiasis

Ans.: (c)

30. Which of the following immune responses is responsible for the rejection of kidney graft?
- (a) Auto-immune responses
 - (b) Humoral immune response
 - (c) Inflammatory immune response
 - (d) Cell-mediated immune response

Ans.: (d)

31. Which of the following factors is responsible for the formation of concentrated urine?
- (a) Low levels of antidiuretic hormone.
 - (b) Maintaining hyperosmolarity towards inner medullary interstitium in the kidneys.
 - (c) Secretion of erythropoietin by juxtaglomerular complex.
 - (d) Hydrostatic pressure during glomerular filtration.

Ans.: (b)

32. Which of the following features of genetic code does allow bacteria to produce human insulin by recombinant DNA technology?
- (a) Genetic code is not ambiguous
 - (b) Genetic code is redundant
 - (c) Genetic code is nearly universal
 - (d) Genetic code is specific

Ans.: (c)

33. Which of the following statements is not correct?
- (a) Lysosomes have numerous hydrolytic enzymes.
 - (b) The hydrolytic enzymes of lysosomes are active under acidic pH.

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- (c) Lysosomes are membrane bound structures.
- (d) Lysosomes are formed by the process of packaging in the endoplasmic reticulum.

Ans.: (d)

34. The concept of *Omnis cellula-e cellula* regarding cell division was first proposed by:

- (a) Rudolf Virchow
- (b) Theodor Schwann
- (c) Schleiden
- (d) Aristotle

Ans.: (a)

35. Use of an artificial kidney during hemodialysis may result in:

- (i) Nitrogenous waste build-up in the body
- (ii) Non-elimination of excess potassium ions
- (iii) Reduced absorption of calcium ions from gastro-intestinal tract
- (iv) Reduced RBC production

Which of the following options is the most appropriate?

- (a) (i) and (ii) are correct
- (b) (ii) and (iii) are correct
- (c) (iii) and (iv) are correct
- (d) (i) and (iv) are correct

Ans.: (c)

36. What is the direction of movement of sugars in phloem?

- (a) Non-multidirectional
- (b) Upward
- (c) Downward
- (d) Bi-directional

Ans.: (d)

37. Which of the following muscular disorders is inherited?

- (a) Tetany

- (b) Muscular dystrophy
- (c) Myasthenia gravis
- (d) Botulism

Ans.: (b)

38. Consider the following features:

- (a) Organ system level of organisation
- (b) Bilateral symmetry
- (c) True coelomates with segmentation of body

Select the correct option of animal groups which possess all the above characteristics:

- (a) Annelida, Arthropoda and Chordata
- (b) Annelida, Arthropoda and Mollusca
- (c) Arthropoda, Mollusca and Chordata
- (d) Annelida, Mollusca and Chordata

Ans.: (a)

39. The frequency of recombination between gene pairs on the same chromosome as a measure of the distance between genes was explained by:

- (a) T. H. Morgan
- (b) Gregor J. Mendel
- (c) Alfred Sturtevant
- (d) Sutton Boveri

Ans.: (c)

40. Following statements describe characteristics of enzyme restriction endonuclease. Identify the incorrect statement.

- (a) The enzyme cuts DNA molecule at identified position within the DNA
- (b) The enzyme binds DNA at specific sites and cuts only one of the two strands.
- (c) The enzyme cuts the sugar-phosphate backbone at specific sites on each strand.
- (d) The enzyme recognizes a specific palindromic nucleotide sequence in the DNA

Ans.: (b)

41. Which of the following statements is incorrect?

- (a) Morels and truffles are edible delicacies.
- (b) Claviceps is a source of many alkaloids and LSD.
- (c) Conidia are produced exogenously and ascospores endogenously.
- (d) Yeasts have filamentous bodies with long thread-like hyphae.

Ans.: (d)

42. Placentation, in which ovules develop on the inner wall of ovary or in the peripheral part, is

- (a) Basal
- (b) Axile
- (c) Parietal
- (d) Free central

Ans.: (c)

43. Which of the following is the most important causes for animals and plants being driven to extinction?

- (a) Habitat loss and fragmentation
- (b) Drought and floods
- (c) Economic exploitation
- (d) Alien species invasion

Ans.: (a)

44. Variations caused by mutation, as proposed by Hugo de Vries, are

- (a) Random and directional
- (b) Random and directionless
- (c) Small and directional
- (d) Small and directionless

Ans.: (b)

45. Respiratory Quotient (R. Q.) value of tripalmitin is:

- (a) 0.9
- (b) 0.7
- (c) 0.07
- (d) 0.09

Ans.: (b)

46. In *Antirrhinum* (Snapdragon), a red flower was crossed with a white flower and in F₁ generation, pink flowers were obtained.

When pink flowers were selfed, the F₂ generation showed white, red and pink flowers. Choose the incorrect statement from the following:

- (a) This experiment does not follow the Principle of Dominance.
- (b) Pink colour in F₁ is due to incomplete dominance.
- (c) Ratio of F₂ is $\frac{1}{4}$ (Red): $\frac{2}{4}$ (Pink): $\frac{1}{4}$ (White).
- (d) Law of Segregation does not apply in this experiment.

Ans.: (d)

47. Select the incorrect statement:

- (a) Male fruit fly is heterogametic.
- (b) In male grasshoppers, 50% of sperms have no sex-chromosome.
- (c) In domesticated fowls, sex of progeny depends on the type of sperm rather than egg.
- (d) Human males have one of their sex-chromosome much shorter than the other.

Ans.: (c)

48. Correct sequence of phases of cell cycle is:

- (a) M → G₁ → G₂ → S
- (b) G₁ → G₂ → S → M
- (c) S → G₁ → G₂ → M
- (d) G₁ → S → G₂ → M

Ans.: (d)

49. *Thiobacillus* is a group of bacteria helpful in carrying out:

- (a) Nitrogen fixation
- (b) Chemoautotrophic fixation
- (c) Nitrification
- (d) Denitrification

Ans.: (d)

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50. Polyblend, a fine powder of recycled modified plastic, has proved to be a good material for:

- (a) Making plastic sacks
- (b) Use as a fertilizer
- (c) Construction of roads
- (d) Making tubes and pipes

Ans.: (c)

51. From evolutionary point of view, retention of the female gametophyte with developing young embryo on the parent sporophyte for some time, is first observed in:

- (a) Liverworts
- (b) Mosses
- (c) Pteridophytes
- (d) Gymnosperms

Ans.: (c)

52. Select the correct option.

- (a) 8th, 9th and 10th pairs of ribs articulate directly with the sternum.
- (b) 11th and 12th pairs of ribs are connected to the sternum with the help of hyaline cartilage.
- (c) Each rib is a flat thin bone and all the ribs are connected dorsally to the thoracic vertebrae and ventrally to the sternum.
- (d) There are seven pairs of vertebrosteral, three pairs of vertebrochondral and two pairs of vertebral ribs.

Ans.: (d)

53. Concanavalin A is:

- (a) An alkaloid
- (b) An essential oil
- (c) A lectin
- (d) A pigment

Ans.: (c)

54. Extrusion of second polar body from egg nucleus occurs:

- (a) After entry of sperm but before fertilization
- (b) After fertilization
- (c) Before entry of sperm into ovum
- (d) Simultaneously with first cleavage

Ans.: (a)

55. Pinus seed cannot germinate and establish without fungal association. This is because:

- (a) Its embryo is immature
- (b) It has obligated association with mycorrhizae.
- (c) It has very hard seed coat.
- (d) Its seeds contain inhibitors that prevent germination.

Ans.: (b)

56. The Earth Summit held in Rio de Janeiro in 1992 was called:

- (a) To reduce CO₂ emissions and global warming.
- (b) For conservation of biodiversity and sustainable utilization of its benefits.
- (c) To assess threat posed to native species by invasive weed species.
- (d) For immediate steps to discontinue use of CFCs that were damaging the ozone layer.

Ans.: (b)

57. DNA precipitation out of a mixture of biomolecules can be achieved by treatment with:

- (a) Isopropanol
- (b) Chilled ethanol
- (c) Methanol at room temperature
- (d) Chilled chloroform

Ans.: (b)

58. Grass leaves curl inwards during very dry weather. Select the most appropriate reason from the following:

- (a) Closure of stomata
- (b) Flaccidity of bulliform cells
- (c) Shrinkage of air spaces in spongy mesophyll
- (d) Tyloses in vessels

Ans.: (b)

59. Match the following structures with their respective location in organs:

- | | |
|--------------------------|-----------------------|
| (A) Crypts of Lieberkuhn | (i) Pancreas |
| (B) Glisson's Capsule | (ii) Duodenum |
| (C) Islets of Langerhans | (iii) Small intestine |
| (D) Brunner's Glands | (iv) Liver |

Select the correct option from the following:

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

Ans.: (c)

60. Match the following hormones with the respective disease:

- | | |
|--------------------|-------------------------|
| (A) Insulin | (i) Addison's disease |
| (B) Thyroxin | (ii) Diabetes insipidus |
| (C) Corticoids | (iii) Arcomegaly |
| (D) Growth Hormone | (iv) Goitre |
| | (v) Diabetes mellitus |

Select the correct option:

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

Ans.: (c)

61. Which of the following contraceptive methods do involve a role of hormone?

- (a) Lactational amenorrhea, Pills, Emergency contraceptives
- (b) Barrier method, Lactational amenorrhea, Pills
- (c) Copper T, Pills, Emergency contraceptives
- (d) Pills, Emergency contraceptives, Barrier methods

Ans.: (a)

62. The drug called 'Heroin' is synthesized by:

- (a) Methylation of morphine
- (b) Acetylation of morphine
- (c) Glycosylation of morphine
- (d) Nitration of morphine

Ans.: (b)

63. In a species, the weight of newborn ranges from 2 to 5 kg. 97% of the new-born with an average weight between 3 to 3.3 kg survive whereas 99% of the infants born with weights from 2 to 2.5 kg or 4.5 to 5 kg die. Which type of selection process is taking place?

- (a) Directional Selection
- (b) Stabilizing Selection
- (c) Disruptive Selection
- (d) Cyclical Selection

Ans.: (b)

64. Conversion of glucose to glucose-6-phosphate, the first irreversible reaction of glycolysis, is catalysed by:

- (a) Aldolase
- (b) Hexokinase
- (c) Enolase
- (d) Phosphofructokinase

Ans.: (b)

65. Which of the following statements is correct?

- (a) Cornea is an external, transparent and protective proteinaceous covering of the eye-ball.
- (b) Cornea consists of dense connective tissue of elastin and can repair itself.
- (c) Cornea is convex, transparent layer which is highly vascularised.
- (d) Cornea consists of dense matrix of collagen and is the most sensitive portion of the eye.

Ans.: (a)

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66. Which of the following ecological pyramids is generally inverted?
- Pyramid of numbers in grassland
 - Pyramid of energy
 - Pyramid of biomass in a forest
 - Pyramid of biomass in a sea

Ans.: (d)

67. Consider the following statements:

- Coenzyme or metal ion that is tightly bound to enzyme protein is called prosthetic group.
- A complete catalytic active enzyme with its bound prosthetic group is called apoenzyme.

Select the correct option:

- Both (i) and (ii) are true.
- (i) is true and (ii) is false.
- Both (i) and (ii) are false.
- (i) is false and (ii) is true.

Ans.: (c)

68. Due to increasing air-borne allergens and pollutants, many people in urban areas are suffering from respiratory disorder causing wheezing due to

- Benign growth on mucous lining of nasal cavity.
- Inflammation of bronchi and bronchioles.
- Proliferation of fibrous tissues and damage of the alveolar walls.
- Reduction in the secretion of surfactants by pneumocytes.

Ans.: (b)

69. Which one of the following statements regarding post-fertilization development in flowering plants is incorrect?

- Ovary develops into fruit
- Zygote develops into embryo
- Central cell develops into endosperm

- Ovules develop into embryo sac

Ans.: (d)

70. Phloem in gymnosperms lacks:

- Albuminous cells and sieve cells
- Sieve tubes only
- Companion cells only
- Both sieve tubes and companion cells

Ans.: (d)

71. It takes very long time for pineapple plants to produce flowers. Which combination of hormones can be applied to artificially induce flowering in pineapple plants throughout the year to increase yield?

- Auxin and Ethylene
- Gibberellin and Cytokinin
- Gibberellin and Absciscic acid
- Cytokinin and Absciscic acid

Ans.: (a)

72. Persistent nucellus in the seed is known as:

- Chalaza
- Perisperm
- Hilum
- Tegmen

Ans.: (b)

73. Cells in G₀ phase:

- Exit the cell cycle
- Enter the cell cycle
- Suspend the cell cycle
- Terminate the cell cycle

Ans.: (a)

74. Match Column I with Column II.

- | Column I | Column II |
|----------------|---|
| (A) Saprophyte | (i) Symbiotic association of fungi with plant roots |
| (B) Parasite | (ii) Decomposition of dead organic materials |
| (C) Lichens | (iii) Living on living plants or animals |
| (D) Mycorrhiza | (iv) Symbiotic association of algae and fungi |

Choose the correct answer from the options given below:

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

Ans.: (d)

75. Which would be the heart rate of a person if the cardiac output is 5L, blood volume in the ventricles at the end of diastole is 100 mL and at the end of ventricular systole is 50 mL?

- (a) 50 beats per minute
- (b) 75 beats per minute
- (c) 100 beats per minute
- (d) 125 beats per minute

Ans.: (c)

76. What triggers activation of protoxin to active Bt toxin of *Bacillus thuringiensis* in bollworm?

- (a) Body temperature
- (b) Moist surface of midgut
- (c) Alkaline pH of gut
- (d) Acidic pH of stomach

Ans.: (c)

77. Ciliated epithelial cells are required to move particles or mucus in a specific direction. In humans, these cells are mainly present in:

- (a) Bile duct and Bronchioles
- (b) Fallopian tubes and Pancreatic duct
- (c) Eustachian tubes and Salivary duct
- (d) Bronchioles and Fallopian tubes

Ans.: (d)

78. Which of the statements given below is not true about formation of Annual Rings in trees?

- (a) Annual ring is a combination of spring wood and autumn wood produced in a year.

- (b) Differential activity of cambium causes light and dark bands of tissue, early and late wood respectively.

- (c) Activity of cambium depends upon variation in climate.

- (d) Annual rings are not prominent in trees of temperate region.

Ans.: (d)

79. What is the fate of the male gametes discharged in the synergid?

- (a) One fuses with the egg, other(s) degenerate(s) in the synergid.
- (b) All fuse with the egg.
- (c) One fuses with the egg, other(s) fuse(s) with synergid nucleus.
- (d) One fuses with the egg and other fuses with central cell nuclei.

Ans.: (d)

80. Match the following genes of the Lac operon with their respective products.

- | | |
|------------|----------------------------|
| (A) i gene | (i) β -galactosidase |
| (B) z gene | (ii) Permease |
| (C) a gene | (iii) Repressor |
| (D) y gene | (iv) Transacetylase |

Select the correct option from the options given below:

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

Ans.: (c)

81. Select the correct sequence of organs in the alimentary canal of cockroach starting from mouth:

- (a) Pharynx → Oesophagus → Crop → Gizzard → Ileum → Colon → Rectum
- (b) Pharynx → Oesophagus → Gizzard → Crop → Ileum → Colon → Rectum

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- (c) Pharynx → Oesophagus → Gizzard → Ileum → Crop → Colon → Rectum
 (d) Pharynx → Oesophagus → Ileum → Crop → Gizzard → Colon → Rectum

Ans.: (a)

82. Match the hominids with their correct brain size:

- | | |
|---------------------------|------------------|
| (A) Homo habilis | (i) 900 cc |
| (B) Homo neanderthalensis | (ii) 1350 cc |
| (C) Homo erectus | (iii) 650-800 cc |
| (D) Homo sapiens | (iv) 1400 cc |

Select the correct option:

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

Ans.: (c)

83. Identify the correct pair representing the causative agent of typhoid fever and the confirmatory test for typhoid.
- (a) Plasmodium vivax/UTI test.
 (b) Streptococcus pneumoniae/Widal test
 (c) Salmonella typhi/Anthrone test
 (d) Salmonella typhi/Widal test

Ans.: (d)

84. How does steroid hormone influence the cellular activities?
- (a) Changing the permeability of the cell membrane.
 (b) Binding to DNA and forming a gene-hormone complex.
 (c) Activating cyclic AMP located on the cell membrane.
 (d) Using aquaporin channels as second messenger.

Ans.: (b)

85. Tidal Volume and Expiratory Reserve Volume of an athlete is 500 mL and 1000 mL respectively. What will be his Expiratory Capacity if the Residual Volume is 1200 mL?

- (a) 1500 mL (b) 1700 mL
 (c) 2200 mL (d) 2700 mL

Ans.: (a)

86. Which of the following is a commercial blood cholesterol lowering agent?

- (a) Cyclosporin A (b) Statin
 (c) Streptokinase (d) Lipases

Ans.: (b)

87. Which of the following statements regarding mitochondria is incorrect?

- (a) Outer membrane is permeable to monomers of carbohydrates fats and proteins.
 (b) Enzymes of electron transport are embedded in outer membrane.
 (c) Inner membrane is convoluted with infoldings.
 (d) Mitochondrial matrix contains single circular DNA molecule and ribosomes.

Ans.: (b)

88. Match the Column I with Column II

- | Column I | Column II |
|-------------------------------------|-----------------------------------|
| (A) P-wave | (i) Depolarisation of ventricles |
| (B) QRS complex | (ii) Repolarisation of ventricles |
| (C) T-wave | (iii) Coronary ischemia |
| (D) Reduction in the size of T-wave | (iv) Depolarisation of atria |
| | (v) Repolarisation of atria |

Select the correct option from the options given below:

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

Ans.: (a)

89. Select the correct group of biocontrol agents.

- (a) *Bacillus thuringiensis*, Tobacco mosaic virus, Aphids
- (b) *Trichoderma*, *Baculovirus*, *Bacillus thuringiensis*

- (c) *Oscillatoria*, *Rhizobium*, *Trichoderma*
- (d) *Nostoc*, *Azospirillum*, *Nucleopolyhedrovirus*

Ans.: (b)

90. Select correctly written scientific name of Mango which was first described by Carolus Linnaeus:

- (a) *Mangifera indica* Car. Linn.
- (b) *Mangifera indica* Linn.
- (c) *Mangifera indica*
- (d) *Mangifera Indica*

Ans.: (b)