

K-CET EXAMINATION – 2026

BIOLOGY – D4 with Key & Solutions

1. In a healthy individual, the Glomerular Filtration Rate (GFR) is _____.

- (1) 125 ml/minute (2) 125 ml/hour
(3) 126 ml/minute (4) 125 ml/second

Ans. (1)

Sol. 125 ml/minute

2. A hormone that initiates flowering and synchronising fruit set in pineapples is _____.

- (1) Ethylene (2) Abscissic Acid
(3) Auxins (4) Gibberellins

Ans. (1)

Sol. Ethylene that initiates flowering and synchronizing fruit set in pineapple

3. Identify the incorrect statement regarding respiratory system in man.

- (1) Lungs are covered by double-layered membrane called pleura.
(2) The alveoli are surrounded by rich blood capillaries.
(3) The trachea, bronchi and bronchioles are supported by 'O' shaped cartilaginous rings.
(4) The right lung is slightly larger than the left lung.

Ans. (3)

Sol. The trachea, bronchi and bronchioles are supported by 'C' shaped cartilaginous rings.

4. Consider the following statements with respect to ECG [Electrocardiogram] and choose the correct answer.

Statement I: 'P' wave represents the depolarisation of ventricles.

Statement II: 'T' wave represents the repolarisation of ventricles

- (1) Statement I and Statement II are wrong.
(2) Statement I is correct but Statement II is wrong.
(3) Statement I is wrong but Statement II is correct.
(4) Statement I and Statement II are correct.

Ans. (3)

Sol. Statement I: 'P' wave represents the depolarisation of Auricles(Atria).

Statement II: 'T' wave represents the repolarisation of ventricles

Statement I is wrong but Statement II is correct.

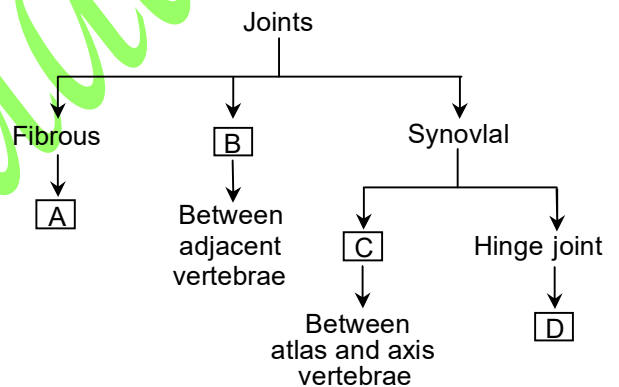
5. Aldosterone from adrenal cortex stimulates the reabsorption of water and Na^+ from _____.

- (1) Proximal Convoluted Tubule (PCT)
(2) Ascending limb of loop of Henle
(3) Distal Convoluted Tubule (DCT)
(4) Descending limb of loop of Henle

Ans. (3)

Sol. Aldosterone from adrenal cortex stimulates the reabsorption of water and Na^+ from Distal Convoluted Tubule (DCT)

6. Observe the flowchart with reference to joints and their examples.



Choose the correct option that matches with the letters given in the boxes.

- (1) A - Cartilaginous joint, B - Pivot joint, C - Knee joint, D - Cranial sutures
(2) A - Pivot joint, B - Knee joint, C - Cranial sutures, D - Cartilaginous joint
(3) A - Saddle joint, B - Cranial sutures, C - Cartilaginous joint, D - Pivot joint
(4) A - Cranial sutures, B - Cartilaginous joint, C - Pivot joint, D - Knee joint

Ans. (4)

Sol. A - Cranial sutures

B - Cartilaginous joint

C - Pivot joint,

D - Knee joint

7. Unipolar neurons are found usually in the embryonic stage. They have

- (1) One axon and one dendrite
(2) Cell body and one axon
(3) Cell body with one axon and many dendrites
(4) Neither axon nor dendrites.

Ans. (2)

Sol. Unipolar neurons are found usually in the embryonic stage. They have cell body and axon

8. Gastrin is a hormone secreted by gastrointestinal (GI) tract, which stimulates the secretion of

- (1) Hydrochloric acid and pepsinogen
- (2) Pancreatic enzymes and bile juice
- (3) Water and bicarbonate ions
- (4) Bicarbonate ions and pepsinogen

Ans. (1)

Sol. Hydrochloric acid and pepsinogen

9. Choose the correct sequence of wall layers in a microsporangium of an angiosperm.

- (1) Epidermis, Middle layer, Endothecium, Tapetum
- (2) Epidermis, Endothecium, Middle layer, Tapetum
- (3) Epidermis, Tapetum, Middle layer, Endothecium
- (4) Epidermis, Middle layer, Tapetum, Endothecium

Ans. (2)

Sol. Epidermis, Endothecium, Middle layer, Tapetum

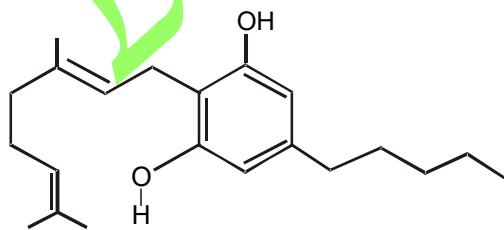
10. Which of the following statement is/are correct for cleistogamous flowers?

- (a) They have exposed anthers and stigma
 - (b) They produce assured seed set
 - (c) They need pollinators for pollination
 - (d) Variations in traits are not seen in next generation
- (1) Only Statement (b) is correct
 - (2) Statements (a) and (c) are correct
 - (3) Statements (b) and (d) are correct
 - (4) Statements (b) and (c) are correct

Ans. (3)

Sol. Cleistogamous flowers are never opened, 100% chance for self pollination, they assured seed set in the absence of pollinators. Hence variations in traits are not seen in next generation.

11. Identify the drug molecule from the skeletal structure shown below.



- (1) Opioid
- (2) Cannabinoid
- (3) Coca-alkaloids
- (4) Morphine

Ans. (2)

Sol. It is a skeletal structure of cannabinoid molecule.

12. Identify the correct path of milk secretion by the mammary glands.

- (1) Alveoli → mammary duct → ampulla → mammary tubule → lactiferous ducts
- (2) Alveoli → mammary tubules → mammary duct → ampulla → lactiferous ducts
- (3) Alveoli → ampulla → mammary duct → mammary tubules → lactiferous ducts
- (4) Alveoli → lactiferous ducts → mammary duct → ampulla → mammary tubule

Ans. (2)

Sol. i) Alveoli – Milk is synthesized

↓

ii) Mammary tubule – Alveoli open into mammary tubule wide section called ampulla

↓

iii) Ampulla – Several mammary duct coverage into wide section called ampulla

↓

iv) Lactiferous duct – Ampulla connect to the lactiferous duct.

13. Match items in Column-I with Column-II and choose the correct option.

Column-I	Column-II
a) Acrosome	i) Contains numerous mitochondria which produce energy
b) Head	ii) Facilitates sperm motility
c) Middle piece	iii) Filled with enzymes that help in fertilization
d) Tail	iv) Contains elongated haploid nucleus

Codes:

- (1) a - iii, b - i, c - iv, d - ii
- (2) a - iv, b - ii, c - iii, d - i
- (3) a - iii, b - ii, c - iv, d - i
- (4) a - iii, b - iv, c - i, d - ii

Ans. (4)

Sol. a - iii, b - iv, c - i, d - ii.

14. Which of the following does NOT produce seminal plasma?

- (1) Epididymis
- (2) Bulbourethral glands
- (3) Seminal vesicles
- (4) Prostate gland

Ans. (1)

Sol. Seminal plasma secreted by accessory glands.

15. Which of the following Sexually Transmitted Infections (STIs) are not completely curable?

- (1) AIDS, Genital warts
- (2) Chlamydia, Gonorrhoea
- (3) Genital warts, Hepatitis B
- (4) AIDS, Genital herpes

Ans. (4)

Sol. AIDS genital herpes and hepatitis B that are not completely curable STDs.

16. Which of the following statements is NOT true about 'Saheli'?

- (1) It is a non-steroidal preparation
- (2) It is a 'once-a-week' pill
- (3) It has low contraceptive value
- (4) It has fewer side effects

Ans. (3)

Sol. Saheli developed by CRDI (Central Drug Research Institute in Lucknow, India) is having high contraceptive value.

17. A woman, unable to conceive after many years of regular unprotected coitus, went to a specialized clinic. On complete examination, the woman was found to be normal, while the male partner was diagnosed with infertility and was unable to inseminate the female due to low sperm count. Suggest the appropriate Assisted Reproductive Technology (ART).

- (1) ZIFT - Zygote Intra Fallopian Transfer
- (2) IUI - Intra Uterine Insemination
- (3) AI - Artificial Insemination
- (4) GIFT - Gamete Intra Fallopian Transfer

Ans. (3)

Sol. AI - Artificial Insemination.

18. The genotypes of husband and wife are $I^A I^B$ and $I^A I^O$. Among the blood groups of their children, how many different genotypes and phenotypes are possible?

- (1) 4 genotypes and 4 phenotypes
- (2) 4 genotypes and 3 phenotypes
- (3) 3 genotypes and 4 phenotypes
- (4) 2 genotypes and 3 phenotypes

Ans. (2)

Sol. After the cross between two parents we will get genotypes $I^A I^A$, $I^A I^B$, $I^A I^O$, $I^B I^O$. Therefore total phenotypes will be 3 (blood group A, B and AB).

19. The classical example of point mutation is

- (1) Haemophilia
- (2) Sickle cell anaemia
- (3) Cystic fibrosis
- (4) Phenyl ketonuria

Ans. (2)

Sol. In sickle cell anaemia the codon GAG which codes for glutamic acid gets mutated to GUG which codes for valine at the sixth position.

20. Read the following statements.

Statement I: In a typical test cross, an organism showing a dominant phenotype is crossed with the recessive parent.

Statement II: The ratio of organisms showing dominant and recessive traits in F_1 , generation of a test cross indicates that the organism with unknown genotype is homozygous dominant.

Choose the correct option.

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true but Statement II is false
- (4) Statement I is false but Statement II is true

Ans. (3)

Sol. I. In test cross an organism having dominant phenotype is crossed with recessive parent.

II. If result of test cross shows ratio of both dominant and recessive traits, It indicates the unknown organism is heterozygous dominant. Ex. Tt, Rr, Yy, li, Gg,etc.

21. Thalassaemia and Sickle cell anemia are due to a problem in globin molecule synthesis.

Select the correct statement.

- (1) Sickle cell anaemia is due to a quantitative problem of globin molecule.
- (2) Both are due to qualitative defects in globin chain synthesis.
- (3) Both are due to quantitative defects in globin chain synthesis.
- (4) Thalassaemia is due to less synthesis of globin molecules.

Ans. (4)

Sol. Thalassaemia is a **quantitative defect** (reduced globin synthesis), while sickle cell anaemia is a **qualitative defect** (structural change in hemoglobin).

22. Who amongst the following scientist/s had no contribution in the development of the double-helix model for the structure of DNA?

- (1) Maurice Wilkins
- (2) Rosalind Franklin
- (3) Meselson and Stahl
- (4) Erwin Chargaff

Ans. (3)

Sol. Meselson and Stahl

They worked on DNA replication, not on the double-helix structure.

23. In a DNA molecule, cytosine is 28%. Calculate the percentage of adenine.

- (1) 56%
- (2) 36%
- (3) 22%
- (4) 18%

Ans. (3)

Sol. Cytosine (C) = 28% → Guanine (G) = 28%

Total = 56%

Remaining (A + T) = 44%

Adenine (A) = 22%

Thymine (T) = 22%

24. Arrange the below given steps of DNA fingerprinting in sequence by selecting the appropriate option.

- a) Digestion of DNA by restriction endonucleases
- b) Autoradiography
- c) Blotting of DNA fragments to nitrocellulose membrane
- d) Isolation of DNA
- e) Separation of DNA fragments by electrophoresis

(1) (a), (e), (d), (c), (b)

(2) (e), (a), (d), (b), (c)

(3) (d), (a), (e), (c), (b)

(4) (c), (b), (a), (e), (d)

Ans. (3)

Sol. (d → a → e → c → b)

Correct order: Isolation → Digestion → Electrophoresis → Blotting → Autoradiography

25. Select the statement which is 'NOT' true about Big Bang Theory.

- (1) Big Bang Theory explains the origin of Universe.
- (2) As Universe expanded, the temperature came down.
- (3) Hydrogen and Helium gases formed before the explosion.
- (4) The gases condensed under gravitation, formed the galaxies.

Ans. (3)

Sol. Hydrogen and helium formed **after** the Big Bang, not before.

26. According to Hugo De Vries, speciation is due to _____.

- (1) Accumulation of small variations
- (2) Intraspecific breeding
- (3) Interspecific breeding
- (4) Single-step large mutation

Ans. (4)

Sol. Speciation occurs due to **single step large mutations**.

27. Identify the correct order of stages in Human evolution.

- a) Homo habilis
- b) Homo erectus
- c) Australopithecus
- d) Neanderthal man
- e) Dryopithecus

- (1) c → e → a → d → b
- (2) e → c → a → b → d
- (3) d → e → b → c → a
- (4) d → c → a → e → b

Ans. (2)

Sol. Dryopithecus → Australopithecus → Homo habilis → Homo erectus → Neanderthal

28. Pollen grains are well preserved as fossils because of the presence of _____.

- (1) Cellulose
- (2) Sporopollenin
- (3) Lignocellulose
- (4) Pectocellulose

Ans. (2)

Sol. Due to presence of **sporopollenin**, a highly resistant material.

29. The causative organism of Pneumonia is

- (1) *Wuchereria malayi*
- (2) *Haemophilus influenza*
- (3) *Salmonella typhi*
- (4) *Trichophyton*

Ans. (2)

Sol. *Haemophilus influenzae*

30. Select the option that contains only secondary lymphoid organs.

- (1) Spleen, Tonsils, Thymus
- (2) Lymph nodes, Appendix, Tonsils
- (3) Peyer's patches, Tonsils, Bone marrow
- (4) Tonsils, Thymus, Lymph nodes

Ans. (2)

Sol. (Lymph nodes, Appendix, Tonsils are all secondary lymphoid organs)

31. Identify the biological response modifier substance which activates the immune system and helps in destroying the tumor

- (1) Histamine
- (2) α -Interferon
- (3) Serotonin
- (4) α -Lactalbumin

Ans. (2)

Sol. The biological response modifier substance which activates the immune system and helps in destroying the tumor is α -Interferon (Alpha-interferon)

32. The conversion of milk into curd by LAB increases the nutritional value by producing _____.

- (1) Vitamin A
- (2) Vitamin B₁₂
- (3) Vitamin C
- (4) Vitamin D

Ans. (2)

Sol. The conversion of milk into curd by LAB increases the nutritional value by producing Vitamin B₁₂.

33. BOD of polluted water is estimated by measuring the amount of _____.

- (1) Total organic matter
- (2) Oxygen evolution
- (3) Oxygen consumption
- (4) Biodegradable organic matter

Ans. (3)

Sol. BOD test measure the rate of uptake of oxygen

34. Given below are two statements.

Statement I: Baculoviruses are pathogens that attack nematodes.

Statement II: Baculoviruses are used as biological control agents in ecologically sensitive areas as they are species-specific in their action. In the light of the above statements, choose the correct answer from the options given below.

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true, but Statement II is false
- (4) Statement I is false, but Statement II is true

Ans. (4)

Sol. Baculoviruses attack arthropods not nematodes

35. Technique to alter the chemistry of genetic materials, DNA and RNA, to introduce these into host organism and change the phenotype of the host is

- (1) Bioprocess engineering
- (2) Cloning
- (3) Genetic engineering
- (4) Transformation

Ans. (3)

Sol. Altering the genetic material done by genetic engineering

36. Given below are two statements.

Statement I: Restriction enzyme BamHI has its recognition site in tet^R region of P^{BR322}.

Statement II: E.coli having P^{BR322} with a desired DNA if inserted at BamHI site can grow in medium containing tetracycline.

In the light of the above statements, choose the correct answer from the options given below.

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true, but Statement II is false
- (4) Statement I is false, but Statement II is true

Ans. (3)

Sol. If desired DNA inserted at BamHI site it cannot grow in tetracycline.

37. Match List I with List II

List I		List II	
a	Visualization of DNA in gel electrophoresis	i	Chitinase
b	Precipitation of DNA	ii	Lysozyme
c	Breaking of cell wall of bacteria	iii	Chilled ethanol
d	Breaking of cell wall of fungus	iv	Ethidium bromide

Codes:

- (1) a- iv, b - iii, c - ii, d - i
- (2) a- iii, b - iv, c - i, d - ii
- (3) a- iv, b - i, c - ii, d - iii
- (4) a- iii, b - ii, c - iv, d - i

Ans. (1)

Sol. Matching type

a- iv, b - iii, c - ii, d - i

38. The human protein obtained from transgenic animals used to treat emphysema is

- (1) Insulin
- (2) α -Lactalbumin
- (3) α -1 antitrypsin
- (4) β -Lactalbumin

Ans. (3)

Sol. Emphysema is treated by α -1 antitrypsin

39. Given below are the sequence of events in the production of human insulin by Eli Lilly.

- a) Preparation of two DNA sequences corresponding to chain A and B of human insulin.
- b) Production of chain A and B separately.
- c) Introduction of chains in plasmids of E.Coli.
- d) Extraction of chain A and B combining them by creating disulphide bonds.

Choose the correct sequence of events.

- (1) a, b, c, d
- (2) a, c, b, d
- (3) a, b, d, c
- (4) a, d, b, c

Ans. (2)

Sol. Two DNA sequence A and B separated Introduced them in plasmids of E.Coli. Chain A and B separately produced. Extracted and combined by disulfide bonds

40. Given below are two statements

Statement I: Adenosine deaminase is crucial for the immune system to function.

Statement II: Adenosine deaminase deficiency can be cured only by bone marrow transplantation.

In the light of the above statements, choose the correct answer from the options given below.

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is true, but Statement II is false
- (4) Statement I is false, but Statement II is true

Ans. (3)

Sol. ADA deficiency can also be cured by gene therapy not only by bone marrow transplantation

41. Which of the following is not correct with reference to exponential growth model?

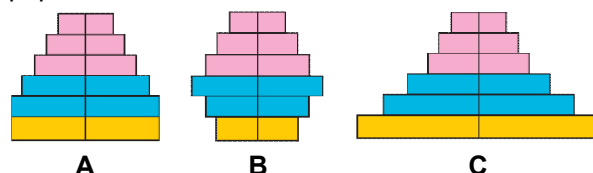
- (1) Resources are limited
- (2) Population grows in a geometric fashion
- (3) A stationary phase is never reached
- (4) Population grows beyond carrying capacity

Ans. (1)

Sol. All statements are correct except resource are limited

Correct statements is resources are unlimited

42. The following graphs represent age pyramids of a population.



Identify the correct option representing the status of age pyramids labelled as A, B and C

- (1) A - stable, B - expanding, C - declining
- (2) A - expanding, B - Stable, C - declining
- (3) A - stable, B - declining, C - expanding
- (4) A - declining, B - stable, C - expanding

Ans. (3)

Sol. A - stable, B - declining, C - expanding

43. Which one of the following options represents the steps of decomposition in sequence?

- (1) Fragmentation \rightarrow Humification \rightarrow Leaching \rightarrow Catabolism \rightarrow Mineralization
- (2) Fragmentation \rightarrow Leaching \rightarrow Catabolism \rightarrow Humification \rightarrow Mineralization
- (3) Fragmentation \rightarrow Humification \rightarrow Mineralization \rightarrow Leaching \rightarrow Catabolism
- (4) Fragmentation \rightarrow Catabolism \rightarrow Humification \rightarrow Mineralization \rightarrow Leaching

Ans. (2)

Sol. Correct sequence of decomposition is

Fragmentation → Leaching → Catabolism → Humification → Mineralization

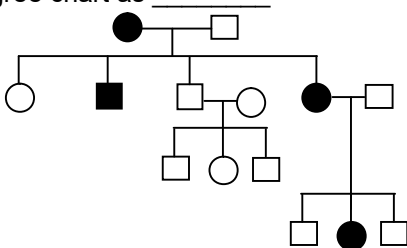
44. The annual Net Primary Productivity on land and ocean respectively are _____ and _____ billion tons

- (1) 170, 107 (2) 115, 55
(3) 55, 115 (4) 107, 170

Ans. (2)

Sol. Total annual NPP is 170 billion tons
Through terrestrial is 115 billion tons
Through ocean is 55 billion tons

45. In a practical examination, the below given pedigree chart was given as spotter for identification. The students identified the pedigree chart as _____



- (1) Autosomal recessive
(2) Autosomal dominant
(3) Sex – linked dominant
(4) Sex – linked recessive

Ans. (2)

Sol. Autosomal dominant inheritance pattern

46. Given below are two statements

Statement I : There is less species biodiversity in tropical latitudes than in temperate region

Statement II : Tropical environments unlike temperate ones are less seasonal, relatively more constant and predictable

If the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true, but Statement II is false
(4) Statement I is false, but Statement II is true

Ans. (4)

Sol. Statement I is false, but Statement II is true

47. A student was given a bisexual, actinomorphic pentamerous, gamosepalous and gamopetalous with 5 stamens in epipetalous condition and bicarpillary syncarpous superior ovary and asked to state the floral formula. Which one of the following is the correct floral formula for the given flower?

- (1) $\oplus \overset{\curvearrowright}{\underset{\curvearrowleft}{\text{♀}}} K_{(5)} C_{(5)} A_5 \underline{G}_{(2)}$
(2) $\oplus \overset{\curvearrowright}{\underset{\curvearrowleft}{\text{♀}}} K_5 \overset{\curvearrowright}{\underset{\curvearrowleft}{C_5}} A_5 \underline{G}_{(2)}$
(3) $\oplus \overset{\curvearrowright}{\underset{\curvearrowleft}{\text{♀}}} K_{(5)} \overset{\curvearrowright}{\underset{\curvearrowleft}{C_{(5)}}} A_5 \underline{G}_{(2)}$
(4) $\oplus \overset{\curvearrowright}{\underset{\curvearrowleft}{\text{♀}}} K_{(5)} \overset{\curvearrowright}{\underset{\curvearrowleft}{C_{(5)}}} A_5 \underline{G}_{(2)}$

Ans. (4)

Sol. $\oplus \overset{\curvearrowright}{\underset{\curvearrowleft}{\text{♀}}} K_{(5)} \overset{\curvearrowright}{\underset{\curvearrowleft}{C_{(5)}}} A_5 \underline{G}_{(2)}$

48. A student was asked to identify a permanent slide of mitosis. He made the following observations.

- (i) Splitting of centromere and formation of daughter chromatids
(ii) Chromatids are migrating towards the opposite poles

The stage would be

- (1) Metaphase (2) Telophase
(3) Anaphase (4) Prophase

Ans. (3)

Sol. Splitting of centromere and formation of daughter chromatids.

Chromatids are migrating towards the opposite poles occurs in anaphase.

49. With respect to binomial nomenclature, identify the incorrect statement

- (1) Biological names are generally in Latin and written in Italics
(2) The first word in the name represents specific epithet and the second component denotes genus
(3) Both the words in the name when handwritten are separately underlined
(4) The first word starts with capital letter, while second word starts with small letter.

Ans. (2)

Sol. The first word in the name represents genus and the second component denotes specific epithet

50. Organism 'X' is a multicellular, heterotrophic, eukaryote with a chitinous cell wall. In which kingdom will you place it?

- (1) Monera
(2) Animalia
(3) Protista
(4) Fungi

Ans. (4)

Sol. X is multicellular, heterotrophic, eukaryote with a chitinous cell wall is kept under kingdom fungi.

51. Read the following statements about Funaria and select the options which are correct.

- (a) Gametophyte is the dominant plant body
(b) The sporophyte is differentiated into foot, seta and capsule
(c) The gemmae are asexual, green, multicellular buds found on the thallus.
(d) The sporophyte has independent existence
(1) a and b (2) a and c
(3) b and c (4) c and d

Ans. (1)

Sol. Gametophyte is dominant. Sporophyte is differentiated into foot, seta and capsule. Gemmae are not present in Funaria, Sporophyte is not independent.

52. Match the animals given in List – I with their excretory organs in List – II

List – I	List – II
a) Leech	i) Flame cells
b) Locust	ii) Proboscis gland
c) Liver fluke	iii) Nephridia
d) Balanoglossus	iv) Malpighian tubules

Choose the correct option from the following:

- (1) a–ii, b–i, c–iv, d–iii
- (2) a–i, b–ii, c–iii, d–iv
- (3) a–iii, b–iv, c–i, d–ii
- (4) a–iv, b–iii, c–ii, d–i

Ans. (3)

Sol. a–iii b–iv, c–i, d–ii

Leech has nephridia.

Locust has Malpighian tubules.

Liver fluke has flame cells.

Balanoglossus has proboscis gland.

53. Identify the flower with polyadelphous condition

- (1) Mustard
- (2) Chinrose
- (3) Citrus
- (4) Pea

Ans. (3)

Sol. Citrus polyadelphous condition means stamens are united into many bundles.

54. The large empty colourless cells seen on the upper epidermis in grasses which facilitate the curling of leaves to minimize water loss are

- (1) Guard cells
- (2) Bulliform cells
- (3) Subsidiary cells
- (4) Mesophyll cells

Ans. (2)

Sol. Bulliform cells. They help in rolling of leaves to reduce water loss.

55. Find the incorrect statement among the following with respect to digestive system of frog.

- (1) Food is captured by a bilobed tongue
- (2) Oesophagus is a long tube that opens into the stomach and continues as intestine
- (3) Liver secretes bile that is stored in gall bladder
- (4) The undigested solid waste moves into rectum and passes out through cloaca.

Ans. (2)

Sol. Oesophagus is a short tube that opens into the stomach and continues as intestine.

56. Which of the following is not the function of plasma membrane?

- (1) Endocytosis
- (2) Formation of intercellular junctions
- (3) Secretion
- (4) DNA synthesis

Ans. (4)

Sol. DNA synthesis: DNA synthesis is not a function of plasma membrane

57. A chromosome with an extremely short and a very long arm is called _____.

- (1) Metacentric
- (2) Telocentric
- (3) Acrocentric
- (4) Submetacentric

Ans. (3)

Sol. A chromosome with one very short arm and one long arm is called Acrocentric.

58. The following statements are the steps in the catalytic action of an enzyme. Arrange them in correct sequence.

- (a) The active site of the enzyme, now in close proximity of the substrate, breaks the chemical bonds of the substrate and the new enzyme product complex is formed.
- (b) The substrate binds tightly to the enzyme, inducing a change in the active site of the enzyme.
- (c) The enzyme releases the products of the reaction and the free enzyme is ready to bind to another molecule of the substrate
- (d) The substrate binds to the active site of the enzyme

- (1) c, a, b, d
- (2) d, b, a, c
- (3) a, b, c, d
- (4) d, c, b, a

Ans. (2)

Sol. d, b, a, c

Correct sequence of enzyme action.

59. A diploid cell which has 8 chromosomes undergoes meiosis and produces 4 daughter cells. What is the number of chromosomes present in each daughter cell formed at the end of meiosis–I?

- (1) 8 chromosomes
- (2) 4 chromosomes
- (3) 16 chromosomes
- (4) 32 chromosomes

Ans. (2)

Sol. 4 chromosomes. Diploid 8 becomes haploid 4 after meiosis–I

60. Cellulose is an important structural component in plants which is made up of

- (1) Fructose
- (2) Galactose
- (3) Glucose
- (4) Sucrose

Ans. (3)

Sol. Cellulose is made up of beta glucose units