

NEET(UG)-2019 (ODISHA) FINAL EXAMINATION
(Held On Monday 20th MAY, 2019)

BIOLOGY

1. Which of the following cell organelles is present in the highest number in secretory cells ?
 (1) Mitochondria
 (2) Golgi complex
 (3) Endoplasmic reticulum
 (4) Lysosomes

Ans. (2)

2. Non-membranous nucleoplasmic structures in nucleus are the site for active synthesis of
 (1) Protein synthesis (2) mRNA
 (3) rRNA (4) tRNA

Ans. (3)

3. Which of the following nucleic acids is present in an organism having 70S ribosomes only ?
 (1) Single stranded DNA with protein coat
 (2) Double stranded circular naked DNA
 (3) Double stranded DNA enclosed in nuclear membrane
 (4) Double stranded circular DNA with histone proteins

Ans. (2)

4. After meiosis I, the resultant daughter cells have
 (1) Same amount of DNA as in the parent cell in S phase
 (2) Twice the amount of DNA in comparison to haploid gamete.
 (3) Same amount of DNA in comparison to haploid gamete
 (4) Four times the amount of DNA in comparison to haploid gamete

Ans. (2)

5. Which of the following organic compounds is the main constituent of Lecithin ?
 (1) Arachidonic acid
 (2) Phospholipid
 (3) Cholesterol
 (4) Phosphoprotein

Ans. (2)

TEST PAPER WITH ANSWER

6. The main difference between active and passive transport across cell membrane is :
 (1) Passive transport is non-selective whereas active transport is selective
 (2) Passive transport requires a concentration gradient across a biological membrane whereas active transport requires energy to move solutes
 (3) Passive transport is confined to anionic carrier proteins whereas active transport is confined to cationic channel proteins
 (4) Active transport occurs more rapidly than passive transport

Ans. (2)

7. Match the items given in column I with those in column II and choose the correct option :

Column I	Column II
(a) Rennin	(i) Vitamin B ₁₂
(b) Enterokinase	(ii) Facilitated transport
(c) Oxyntic cells	(iii) Milk proteins
(d) Fructose	(iv) Trypsinogen
(1) a-iii, b-iv, c-ii, d-i	(2) a-iv, b-iii, c-i, d-ii
(3) a-iv, b-iii, c-ii, d-i	(4) a-iii, b-iv, c-i, d-ii

Ans. (4)

8. Kwashiorkor disease is due to :-
 (1) Simultaneous deficiency of proteins and fats
 (2) Simultaneous deficiency of proteins and calories
 (3) Deficiency of carbohydrates
 (4) Protein deficiency not accompanied by calorie deficiency

Ans. (4)

9. Select the correct sequence of events :
 (1) Gametogenesis → Gamete transfer → Syngamy → Zygote → Cell division (Cleavage) → Cell differentiation → Organogenesis
 (2) Gametogenesis → Gamete transfer → Syngamy → Zygote → Cell division (Cleavage) → Organogenesis → Cell differentiation
 (3) Gametogenesis → Syngamy → Gamete transfer → Zygote → Cell division (Cleavage) → Cell differentiation → Organogenesis
 (4) Gametogenesis → Gamete transfer → Syngamy → Zygote → Cell differentiation → Cell division (Cleavage) → Organogenesis

Ans. (1)

10. Which of the following hormones is responsible for both the milk ejection reflex and the foetal ejection reflex ?

- (1) Estrogen (2) Prolactin
(3) Oxytocin (4) Relaxin

Ans. (3)

11. No new follicles develop in the luteal phase of the menstrual cycle because

- (1) Follicles do not remain in the ovary after ovulation
(2) FSH levels are high in the luteal phase
(3) LH levels are high in the luteal phase
(4) Both FSH and LH levels are low in the luteal phase

Ans. (4)

12. In Australia, marsupials and placental mammals have evolved to share many similar characteristics. This type of evolution may be referred to as :

- (1) Adaptive Radiation (2) Divergent Evolution
(3) Cyclical Evolution (4) Convergent Evolution

Ans. (4)

13. Match the items of column I with column II

Column I	Column II
(a) XX-XO method of sex determination	(i) Turner's syndrome
(b) XX-XY method of sex determination	(ii) Female heterogametic
(c) Karyotype-45	(iii) Grasshopper
(d) ZW-ZZ method of sex determination	(iv) Female homogametic

Select the correct option from the following :

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

Ans. (3)

14. What will be the sequence of mRNA produced by the following stretch of DNA ?

3'ATGCATGCATGCATG5' TEMPLATE STRAND
5' TACGTACGTACGTAC3' CODING STRAND

- (1) 3'AUGCAUGCAUGCAUG5'
(2) 5'UACGUACGUACGUAC 3'
(3) 3' UACGUACGUACGUAC 5'
(4) 5' AUGCAUGCAUGCAUG 3'

Ans. (2)

15. Select the **incorrect** statement regarding inbreeding

- (1) Inbreeding helps in elimination of deleterious alleles from the population
(2) Inbreeding is necessary to evolve a pureline in any animal
(3) Continued inbreeding reduces fertility and leads to inbreeding depression
(4) Inbreeding depression can not be overcome by out-crossing

Ans. (4)

16. A biocontrol agent to be a part of an integrated pest management should be

- (1) Species-specific and symbiotic
(2) Free living and broad spectrum
(3) Narrow spectrum and symbiotic
(4) Species-specific and inactive on non-target organisms

Ans. (4)

17. Match the following enzymes with their functions :

(a) Restriction endonuclease	(i) Joins the DNA fragments
(b) Restriction exonuclease	(ii) Extends primers on genomic DNA template
(c) DNA ligase	(iii) Cuts DNA at specific position
(d) Taq polymerase	(iv) Removes nucleotides from the ends of DNA

Select the correct option from the following :

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

Ans. (2)

18. The two antibiotic resistance genes on vector pBR322 are for

- (1) Ampicillin and Tetracycline
(2) Ampicillin and Chloramphenicol
(3) Chloramphenicol and Tetracycline
(4) Tetracycline and Kanamycin

Ans. (1)

19. Exploitation of bioresources of a nation by multinational companies without authorization from the concerned country is referred to as-

- (1) Bioweapon (2) Biopiracy
(3) Bioethics (4) Biowar

Ans. (2)

20. Carnivorous animals - lions and leopards, occupy the same niche but lions predate mostly larger animals and leopards take smaller ones. This mechanism of competition is referred to as -

- (1) Character displacement
- (2) Altruism
- (3) Resource partitioning
- (4) Competitive exclusion

Ans. (3)

21. Decline in the population of indian native fishes due to introduction of *Clarias gariepinus* in river Yamuna can be categoriesd as

- (1) Co-extinction
- (2) Habitat fragmentation
- (3) Over exploitation
- (4) Allen species invasion

Ans. (4)

22. Match the following RNA polymerase with their transcribed products :

- | | |
|------------------------|-------------|
| (a) RNA polymerase I | (i) tRNA |
| (b) RNA polymerase II | (ii) rRNA |
| (c) RNA polymerase III | (iii) hnRNA |

Select the correct option from the following :

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

Ans. (3)

23. In a marriage between male with blood group A and female with blood group B, the progeny had either blood group AB or B. What could be the possible genotype of parents ?

- (1) $I^A i$ (Male) : $I^B I^B$ (Female)
- (2) $I^A I^A$ (Male) : $I^B I^B$ (Female)
- (3) $I^A I^A$ (Male) : $I^B i$ (Female)
- (4) $I^A i$ (Male) : $I^B i$ (Female)

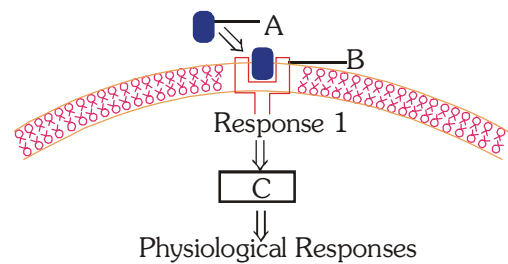
Ans. (1)

24. A population of a species invades a new area. Which of the following condition will lead to Adaptive Radiation ?

- (1) Area with large number of habitats having very low food supply
- (2) Area with a single type of vacant habitat
- (3) Area with many types of vacant habitats
- (4) Area with many habitats occupied by a large number of species

Ans. (3)

25. Identify A, B and C in the diagrammatic representation of the mechanism of hormone action.



Select the correct option from the following :

- (1) A-Steroid Hormone; B-Hormone-receptor Complex, C-Protein
- (2) A-Protein Hormone, B-Receptor; C-Cyclic AMP
- (3) A-Steroid Hormone; B-Receptor, C - Second Messenger
- (4) A-Protein Hormone; B-Cyclic AMP, C-Hormone-receptor Complex

Ans. (2)

26. Humans have acquired immune system that produces antibodies to neutralize pathogens. Still innate immune system is present at the time of birth because it

- (1) is very specific and uses different macrophages.
- (2) produces memory cells for mounting fast secondary response.
- (3) has natural killer cells which can phagocytose and destroy microbes.
- (4) provides passive immunity.

Ans. (3)

27. Which of the following statements is **not** correct?

- (1) An action potential in an axon does not move backward because the segment behind is in a refractory phase
- (2) Depolarisation of hair cells of cochlea results in the opening of the mechanically gated potassium -ion channels.
- (3) Rods are very sensitive and contribute to daylight vision.
- (4) In the knee-jerk reflex, stimulus is the stretching of muscle and response is its contraction.

Ans. (3)

- 28.** Match the following joints with the bones involved:
- | | |
|-------------------|--|
| (1) Gliding joint | (i) Between carpal and metacarpal of thumb |
| (2) Hinge joint | (ii) Between Atlas and Axis |
| (3) Pivot joint | (iii) Between the carpals |
| (4) Saddle joint | (iv) Between Humerus and Ulna. |

Select the correct option from the following:

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

Ans. (1)

- 29.** Which of the following diseases is an autoimmune disorder?

- (1) Myasthenia gravis (2) Arthritis
 (3) Osteoporosis (4) Gout

Ans. (1)

- 30.** Artificial light, extended work-time and reduced sleep-time disrupt the activity of

- (1) Thymus gland
 (2) Pineal gland
 (3) Adrenal gland
 (4) Posterior pituitary gland

Ans. (2)

- 31.** Which of the following conditions will stimulate parathyroid gland to release parathyroid hormone?

- (1) Fall in active Vitamin D levels
 (2) Fall in blood Ca^{+2} levels
 (3) Fall in bone Ca^{+2} levels
 (4) Rise in blood Ca^{+2} levels

Ans. (2)

- 32.** Which of the following is a correct statement?

- (1) IUDs once inserted need not be replaced.
 (2) IUDs are generally inserted by the user herself
 (3) IUDs increase phagocytosis of sperms in the uterus.
 (4) IUDs suppress gametogenesis.

Ans. (3)

- 33.** Which of the following sexually transmitted diseases do not specifically affect reproductive organs?

- (1) Genital warts and Hepatitis-B
 (2) Syphilis and Genital herpes
 (3) AIDS and Hepatitis B
 (4) Chlamydia and AIDS

Ans. (3)

- 34.** Match the following genera with their respective phylum:

- | | |
|---------------------|----------------------|
| (a) <i>Ophura</i> | (i) Mollusca |
| (b) <i>Physalia</i> | (ii) Platyhelminthes |
| (c) <i>Pinctada</i> | (iii) Echinodermata |
| (d) <i>Planaria</i> | (iv) Coelenterata |

Select the correct option:

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

Ans. (2)

- 35.** Which of the following animals are true coelomates with bilateral symmetry?

- (1) Adult Echinoderms (2) Aschelminthes
 (3) Platyhelminthes (4) Annelids

Ans. (4)

- 36.** The contrasting characteristics generally in a pair used for identification of animals in Taxonomic Key are referred to as :

- (1) Lead (2) Couplet
 (3) Doublet (4) Alternate

Ans. (2)

- 37.** Match the following cell structure with its characteristic feature:

- | | |
|------------------------|---|
| (a) Tight junctions | (i) Cement neighbouring cells together to form sheet |
| (b) Adhering Junctions | (ii) Transmit information through chemical to another cells |
| (c) Gap junctions | (iii) Establish a barrier to prevent leakage of fluid across epithelial cells |
| (d) Synaptic junctions | (iv) Cytoplasmic channels to facilitate communication between adjacent cells |

Select correct option from the following

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

Ans. (3)

- 38.** Which of the following statements is INCORRECT?
- (1) Cockroaches exhibit mosaic vision with less sensitivity and more resolution.
 - (2) A mushroom-shaped gland is present in the 6th-7th abdominal segments of male cockroach.
 - (3) A pair of spermatheca is present in the 6th segment of female cockroach.
 - (4) Female cockroach possesses sixteen ovarioles in the ovaries.

Ans. (1)

- 39.** Select the correct statement.

- (1) Expiration occurs due to external intercostal muscles
- (2) Intrapulmonary pressure is lower than the atmospheric pressure during inspiration.
- (3) Inspiration occurs when atmospheric pressure is less than intrapulmonary pressure.
- (4) Expiration is initiated due to contraction of diaphragm.

Ans. (2)

- 40.** The maximum volume of air a person can breathe in after a forced expiration is known as :

- (1) Expiratory Capacity
- (2) Vital Capacity
- (3) Inspiratory Capacity
- (4) Total lung Capacity

Ans. (2)

- 41.** All the components of the nodal tissue are autoexcitable. Why does the SA node act as the normal pacemaker?

- (1) SA node has the lowest rate of depolarisation.
- (2) SA node is the only component to generate the threshold potential.
- (3) Only SA node can convey the action potential to the other components.
- (4) SA node has the highest rate of depolarisation.

Ans. (4)

- 42.** A specialised nodal tissue embedded in the lower corner of the right atrium, close to Atrio-ventricular septum, delays the spreading of impulses to heart apex for about 0.1 sec. The delay allows.

- (1) blood to enter aorta.
- (2) the ventricles to empty completely.
- (3) blood to enter pulmonary arteries.
- (4) the atria to empty completely.

Ans. (4)

- 43.** Match the following parts of a nephron with their function:

- | | |
|-------------------------------------|--|
| (a) Descending limb of Henle's loop | (i) Reabsorption of salts only |
| (b) Proximal Convoluted tubule | (ii) Reabsorption of water only |
| (c) Ascending limb of Henle's loop | (iii) Conditional reabsorption of sodium ion and water |
| (d) Distal convoluted tubule | (iv) Reabsorption of ion, water and organic nutrients. |

Select the correct option from the following :

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

Ans. (2)

- 44.** Match the items in Column-I with those in Column-II:

- | Column-I | Column-II |
|--------------------|---------------------------|
| (a) Podocytes | (i) Crystallised oxalates |
| (b) Protonephridia | (ii) Annelids |
| (c) Nephridia | (iii) Amphioxus |
| (d) Renal calculi | (iv) Filtration slits |

Select the correct option from the following :

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

Ans. (3)

- 45.** Which of the following receptors are specifically responsible for maintenance of balance of body and posture?

- (1) Basilar membrane and otoliths
- (2) Hair cells and organ of corti
- (3) Tectorial membrane and macula
- (4) Crista ampullaris and macula

Ans. (4)

- 46.** Which of the following is against the rules of ICBN?

- (1) Hand written scientific names should be underlined.
- (2) Every species should have a generic name and a specific epithet.
- (3) Scientific names are in Latin and should be italicized.
- (4) Generic and specific names should be written starting with small letters.

Ans. (4)

47. Mad cow disease in cattle is caused by an organism which has :-
 (1) inert crystalline structure
 (2) abnormally folded protein
 (3) free RNA without protein coat
 (4) free DNA without protein coat

Ans. (2)

48. Which of the following statements is correct ?
 (1) Lichens do not grow in polluted areas.
 (2) Algal component of lichens is called mycobiont.
 (3) Fungal component of lichens is called phycobiont
 (4) Lichens are not good pollution indicators.

Ans. (1)

49. Match the organisms in column-I with habitats in column-II

Column-I	Column-II
(a) Halophiles	(i) Hot springs
(b) Thermoacidophiles	(ii) Aquatic environment
(c) Methanogens	(iii) Guts of ruminants
(d) Cyanobacteria	(iv) Salty area

Select the correct answer from the options given below :-

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

Ans. (1)

50. In the dicot root the vascular cambium originates from :-
 (1) Tissue located below the phloem bundles and a portion of pericycle tissue above protoxylem.
 (2) Cortical region.
 (3) Parenchyma between endodermis and pericycle.
 (4) Intrafascicular and interfascicular tissue in a ring.

Ans. (1)

51. Which of the following shows whorled phyllotaxy ?
 (1) Mustard
 (2) China rose
 (3) *Alstonia*
 (4) *Calotropis*

Ans. (3)

52. Regeneration of damaged growing grass following grazing is largely due to :-
 (1) Lateral meristem
 (2) Apical meristem
 (3) Intercalary meristem
 (4) Secondary meristem

Ans. (3)

53. Bicarpellary ovary with obliquely placed septum is seen in :-
 (1) *Brassica* (2) *Aloe*
 (3) *Solanum* (4) *Sesbania*

Ans. (3)

54. Which is the most common type of embryo sac in angiosperms ?
 (1) Tetrasporic with one mitotic stage of divisions
 (2) Monosporic with three sequential mitotic divisions
 (3) Monosporic with two sequential mitotic divisions
 (4) Bisporic with two sequential mitotic divisions

Ans. (2)

55. From the following, identify the **correct combination** of salient features of Genetic Code :-
 (1) Universal, Non-ambiguous, Overlapping
 (2) Degenerate, Overlapping, Commaless
 (3) Universal, Ambiguous, Degenerate
 (4) Degenerate, Non-overlapping, Non-ambiguous

Ans. (4)

56. Which scientist experimentally proved that DNA is the sole genetic material in bacteriophage ?
 (1) Beadle and Tatum
 (2) Messelson and Stahl
 (3) Hershey and Chase
 (4) Jacob and Monod

Ans. (3)

57. In the process of transcription in Eukaryotes, the RNA polymerase I transcribes :-
 (1) mRNA with additional processing, capping and tailing
 (2) tRNA, 5 SrRNA and snRNAs
 (3) rRNAs-28 S, 18 S and 5.8 S
 (4) Precursor of mRNA, hnRNA

Ans. (3)

58. In which genetic condition, each cell in the affected person, has three sex chromosomes XXY ?
 (1) Thalassemia
 (2) Klinefelter's Syndrome
 (3) Phenylketonuria
 (4) Turner's Syndrome

Ans. (2)

59. What initiation and termination factors are involved in transcription in Eukaryotes ?
 (1) σ and ρ , respectively
 (2) α and β , respectively
 (3) β and γ , respectively
 (4) α and σ , respectively

Ans. (Bonus)

- 60.** Which of the following statements is correct about the origin and evolution of men ?
- (1) Agriculture came around 50,000 years back.
 - (2) The *Dryopithecus* and *Ramapithecus* primates existing 15 million years ago, walked like men.
 - (3) *Homo habilis* probably ate meat.
 - (4) Neanderthal men lived in Asia between 1,00,000 and 40,000 years back.

Ans. (4)

- 61.** The production of gametes by the parents, the formation of zygotes, the F₁ and F₂ plants, can be understood using

- (1) Pie diagram
- (2) A pyramid diagram
- (3) Punnet square
- (4) Wenn diagram

Ans. (3)

- 62.** Match the column I with column II

Column-I	Column-II
(a) Golgi apparatus	(i) Synthesis of protein
(b) Lysosomes	(ii) Trap waste and excretory products
(c) Vacuoles	(iii) Formation of glycoproteins and glycolipids
(d) Ribosomes	(iv) Digesting biomolecules

Choose the right match from options given below :-

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

Ans. (1)

- 63.** Prosthetic groups differ from co-enzymes in that :-

- (1) they require metal ions for their activity.
- (2) they (prosthetic groups) are tightly bound to apoenzymes.
- (3) their association with apoenzymes is transient.
- (4) they can serve as co-factors in a number of enzyme-catalyzed reactions.

Ans. (2)

- 64.** Crossing over takes place between which chromatids and in which stage of the cell cycle ?

- (1) Non-sister chromatids of non-homologous chromosomes at Zygotene stage of prophase I.
- (2) Non-sister chromatids of homologous chromosomes at Pachytene stage of prophase I.
- (3) Non-sister chromatids of homologous chromosomes at Zygotene stage of prophase I.
- (4) Non-sister chromatids of non-homologous chromosomes at Pachytene stage of prophase I.

Ans. (2)

- 65.** "Ramachandran plot" is used to confirm the structure of :-

- (1) RNA
- (2) Proteins
- (3) Triacylglycerides
- (4) DNA

Ans. (2)

- 66.** Which of the following is not a feature of active transport of solutes in plants ?

- (1) Occurs against concentration gradient
- (2) Non-selective
- (3) Occurs through membranes
- (4) Requires ATP

Ans. (2)

- 67.** Which of the following bacteria reduce nitrate in soil into nitrogen ?

- (1) *Nitrobacter*
- (2) *Nitrococcus*
- (3) *Thiobacillus*
- (4) *Nitrosomonas*

Ans. (3)

- 68.** What will be the direction of flow of water when a plant cell is placed in a hypotonic solution ?

- (1) Water will flow in both directions
- (2) Water will flow out of the cell
- (3) Water will flow into the cell
- (4) No flow of water in any direction

Ans. (3)

- 69.** Where is respiratory electron transport system (ETS) located in plants ?

- (1) Mitochondrial matrix
- (2) Outer mitochondrial membrane
- (3) Inner mitochondrial membrane
- (4) Intermembrane space

Ans. (3)

- 70.** In Hatch and Slack pathway, the primary CO₂ acceptor is -

- (1) Oxaloacetic acid
- (2) Phosphoglyceric acid
- (3) Phosphoenol pyruvate
- (4) Rubisco

Ans. (3)

- 71.** Removal of shoot tips is a very useful technique to boost the production of tea-leaves. This is because

- (1) Gibberellins prevent bolting and are inactivated
- (2) Auxins prevent leaf drop at early stages
- (3) Effect of auxins is removed and growth of lateral buds is enhanced.
- (4) Gibberellins delay senescence of leaves.

Ans. (3)

72. One scientist cultured *Cladophora* in a suspension of *Azotobacter* and illuminated the culture by splitting light through a prism. He observed that bacteria accumulated mainly in the region of:
 (1) Violet and green light
 (2) Indigo and green light
 (3) Orange and yellow light
 (4) Blue and red light

Ans. (4)

73. In order to increase the yield of sugarcane crop, which of the following plant growth regulators should be sprayed?
 (1) Ethylene (2) Auxins
 (3) Gibberellins (4) Cytokinins

Ans. (3)

74. What type of pollination takes place in *Vallisneria*?
 (1) Pollination occurs in submerged condition by water
 (2) Flowers emerge above surface of water, and pollination occurs by insects.
 (3) Flowers emerge above water surface, and pollen is carried by wind.
 (4) Male flowers are carried by water currents to female flowers at surface of water

Ans. (4)

75. In which one of the following, both autogamy and geitonogamy are prevented?
 (1) Wheat (2) Papaya
 (3) Castor (4) Maize

Ans. (2)

76. Match the placental types (**column-I**) with their examples (**column-II**)

Column-I	Column-II
(a) Basal	(i) Mustard
(b) Axile	(ii) China rose
(c) Parietal	(iii) Dianthus
(d) Free central	(iv) Sunflower

Choose the correct answer from the following options:

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

Ans. (3)

77. A selectable marker is used to:
 (1) help in eliminating the non-transformants, so that the transformants can be regenerated
 (2) identify the gene for a desired trait in an alien organism
 (3) select a suitable vector for transformation in a specific crop
 (4) mark a gene on a chromosome for isolation using restriction enzyme

Ans. (1)

78. Western Ghats have a large number of plant and animal species that are not found anywhere else. Which of the following terms will you use to notify such species?
 (1) Endemic (2) Vulnerable
 (3) Threatened (4) Keystone

Ans. (1)

79. Which of the following statements about ozone is correct?
 (1) Tropospheric ozone protects us from UV radiations.
 (2) Stratospheric ozone is 'bad'
 (3) Tropospheric ozone is 'good'
 (4) Stratospheric ozone protects us from UV radiations.

Ans. (4)

80. Exploration of molecular, genetic and species level diversity for novel products of economic importance is known as:
 (1) Biopiracy (2) Bioenergetics
 (3) Bioremediation (4) Bioprospecting

Ans. (4)

81. Which of the following is an innovative remedy for plastic waste?
 (1) Burning in the absence of oxygen
 (2) Burying 500 m deep below soil surface
 (3) Polyblend
 (4) Electrostatic precipitator

Ans. (3)

82. Between which among the following, the relationship is not an example of commensalism?
 (1) Orchid and the tree on which it grows
 (2) Cattle Egret and grazing cattle
 (3) Sea Anemone and Clown fish
 (4) Female wasp and fig species

Ans. (4)

83. If an agricultural field is liberally irrigated for a prolonged period of time, it is likely to face problem of:
 (1) Metal toxicity (2) Alkalinity
 (3) Acidity (4) Salinity

Ans. (4)

84. Which of the following statements about methanogens is not correct?

- (1) They can be used to produce biogas.
- (2) They are found in the rumen of cattle and their excreta
- (3) They grow aerobically and breakdown cellulose-rich food.
- (4) They produce methane gas.

Ans. (3)

85. In mung bean, resistance to yellow mosaic, virus and powdery mildew were brought about by :

- (1) Mutation breeding
- (2) Biofortification
- (3) Tissue culture
- (4) Hybridization and selection

Ans. (1)

86. Coca alkaloid or cocaine is obtained from:

- (1) *Papaver somniferum*
- (2) *Atropa belladonna*
- (3) *Erythroxylum coca*
- (4) *Datura*

Ans. (3)

87. Among the following pairs of microbes, which pair has both the microbes that can be used as biofertilizers?

- (1) *Aspergillus* and *Rhizopus*
- (2) *Rhizobium* and *Rhizopus*
- (3) *Cyanobacteria* and *Rhizobium*
- (4) *Aspergillus* and *Cyanobacteria*

Ans. (3)

88. Given below are four statements pertaining to separation of DNA fragments using gel electrophoresis. Identify the incorrect statements.

- (a) DNA is negatively charged molecule and so it is loaded on gel towards the Anode terminal
- (b) DNA fragments travel along the surface of the gel whose concentration does not affect movement of DNA.
- (c) Smaller the size of DNA fragment larger is the distance it travels through it.
- (d) Pure DNA can be visualized directly by exposing UV radiation.

Choose correct answer from the options given below

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

Ans. (4)

89. An enzyme catalysing the removal of nucleotides from ends of DNA is:

- | | |
|-----------------|------------------|
| (1) DNA ligase | (2) Endonuclease |
| (3) Exonuclease | (4) Protease |

Ans. (3)

90. In RNAi, the genes are silenced using:

- | | |
|------------|------------|
| (1) ds-RNA | (2) ss-DNA |
| (3) ss-RNA | (4) ds-DNA |

Ans. (1)