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Answers & Solutions

Time : 45 min. *for* **M.M. : 200**

CUET UG-2023

(Biology)

IMPORTANT INSTRUCTIONS:

1. The test is of 45 Minutes duration.
2. The test contains 50 Questions out of which 40 questions need to be attempted.
3. Marking Scheme of the test:
   a. Correct answer or the most appropriate answer: Five marks (+5)
   b. Any incorrect option marked will be given minus one mark (–1).
   c. Unanswered/Marked for Review will be given no mark (0).

Choose the correct answer :

1. Match **List-I** with **List-II.**

	List-I (Causal Agent)		**List-II (Disease)**
(A)	*Salmonella typhi*	(I)	Typhoid
(B)	*Streptococcus pneumoniae*	(II)	Pneumonia
(C)	Rhino Viruses	(III)	Common cold
(D)	*Plasmodium*	(IV)	Malaria

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (1)

Sol. Option (1) is the answer as,

- *Salmonella typhi* is a pathogenic bacterium which causes typhoid fever in human beings.
- Bacteria like *Streptococcus pneumoniae* and *Haemophilus influenzae* are responsible for the disease pneumonia in humans which infects the alveoli of the lungs.
- Rhinoviruses causes one of the most infectious human ailments – the common cold.
- *Plasmodium*, a tiny protozoan is responsible for malaria.

2. The historic convention on Biological Diversity held in Rio de Janeiro in 1992 is also called:

(1) The World Summit

(2) MAB Programme

(3) The Earth Summit

(4) G - 16 Summit

Answer (3)

Sol. The historic convention on Biological Diversity ('The Earth Summit') held in Rio de Janeiro in 1992, called upon all nations to take appropriate measures for conservation of biodiversity and sustainable utilization of its benefits. Thus, option (3) is correct.

The World Summit was held in Johannesburg in 2002. Thus option (1) is incorrect.

The MAB programme of UNESCO was created in 1971. Thus, option (2) is incorrect.

3. Out of following plants. which one is not browsed by cattle:

(1) Wheat

(2) Cowpea

(3) Sugar cane

(4) *Calotropis*

Answer (4)

Sol. Any cattle never browse on *Calotropis* as it produces highly poisonous cardiac glycosides. Thus, option (4) is correct.

4. Arrange the following steps of experiments performed by Griffith in correct series.

(A) 'S' strain → injected into mice → Mice died

(B) 'S' strain (Heat killed) → injected into mice → Mice lived

(C) 'R' strain → injected into mice → Mice lived

(D) 'S' strain (Heat killed) + 'R' strain (Live) → injected into mice → Mice died

Choose the **correct** answer from the options given below:

(1) (A), (B), (C), (D) (2) (B), (A), (C), (D)

(3) (B), (C), (D), (A) (4) (A), (C), (B), (D)

Answer (4)

Sol. The correct sequence of steps taken by Frederick Griffith in his experiments is

(A) 'S' strain → injected into mice → Mice died

(B) 'R' strain → injected into mice → Mice lived

(C) 'S' strain (Heat-killed) → injected into mice → Mice lived

(D) 'S' strain (Heat-killed) + 'R' strain (Live) → injected into mice → Mice died

Thus, option (4) is correct *i.e.,* (A, C, B, D)

5. The process of RNA interference (RNAi) was used in Tobacco plant to develop resistance against:

(1) Viruses

(2) Fungi

(3) Nematodes

(4) Insects

Answer (3)

Sol. Option (3) is the answer as, a nematode *Meloidogyne incognita* infects the roots of tobacco plants and causes a great reduction in yield. A novel strategy was adopted to prevent this infestation which was based on the process of RNAi.

Options (1), (2) and (4) are incorrect as using *Agrobacterium* vectors, nematode-specific genes were introduced into the host plants. The introduction of DNA was such that it produced both sense and anti-sense RNA in the host cells, which ultimately initiated RNAi.

6. Identify the gene which is **not** effective against cotton boll worms?

(1) *cryIAb*

(2) *cryIAc*

(3) *cryIIAb*

(4) Both (2) and (3)

Answer (1)

Sol. Option (1) is the answer as the protein encoded by gene *cryIAb* controls corn borer.

Options (2), (3) and (4) are not the answers as the protein encoded by the genes *cryIAc* and *cryIIAb* control the cotton bollworms.

7. Match **List - I** with **List - II.**

	List - I		**List- II**
(A)	Polyembryony	(I)	Apple
(B)	Parthenocarpy	(II)	Female gametophyte
(C)	False Fruit	(III)	Orange
(D)	Embryo Sac	(IV)	Banana

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (2)

Sol. In *Citrus* fruits like oranges and grape fruits, polyembryony is common and is often used in the propagation of these plants.

Banana is a parthenocarpic fruit, as in this plant fruit is developed without fertilization.

In a few species, such as apple, strawberry *etc*., the thalamus also contributes to fruit formation. Such fruits are called false fruits.

Embryo sac represents the female gametophyte of angiosperms.

Thus, option 2 is correct.

8. Which of the following is **not** a nitrogen fixing micro-organism?

(1) *Azotobacter*

(2) *Oscillatoria*

(3) *Acetobacter*

(4) *Nostoc*

Answer (3)

Sol. *Acetobacter aceti* is used in the production of acetic acid. It is not a nitrogen fixing microbe. Thus, option 3 is correct.

Azotobacter, Oscillatoria and *Nostoc* are nitrogen-fixing microbes. Thus, option 1, 2 and 4 are incorrect.

9. Fresh water animals cannot live for long in sea water and vice versa as they face:

(1) Temperature variations

(2) Tidal waves

(3) Predators

(4) Osmotic problems

Answer (4)

Sol. Many freshwater animals cannot live for long in sea water and vice versa because of the osmotic problems, they would face. Thus, option 4 is correct.

10. Match **List - I** with **List - II.**

	List - I		**List - II**
(A)	Metabolic Disorder	(I)	Family tree over generation
(B)	Pedigree analysis	(II)	Blood disease
(C)	Thalassemia	(III)	Phenylketonuria
(D)	Trisomy of 21st chromosome	(IV)	Down's Syndrome

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (3)

Sol. Phenylketonuria is an inborn error of metabolism, which is also inherited as the autosomal recessive trait.

In the pedigree analysis the inheritance of a particular trait is represented in the family tree over generations.

Thalassemia is an autosome-linked recessive blood disease due to either mutation or deletion which ultimately results in reduced rate of synthesis of one of the globin chains that make up haemoglobin.

Down's syndrome is caused due to the presence of an additional copy of the chromosome number 21 (trisomy of 21).

Thus, option 3 is correct.

11. Match **List - I** with **List – II.**

	List - I		**List - II**
(A)	Lymphoid Organ	(I)	ELISA
(B)	Cancer	(II)	Widal Test
(C)	HIV	(III)	Bone marrow and Thymus
(D)	Typhoid	(IV)	Carcinogens

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (2)

Sol. Option (2) is the answer as,

- Bone marrow and thymus are primary lymphoid organs.
- Transformation of normal cells into cancerous neoplastic cells may be induced by physical, chemical or biological agents. There agents are called carcinogens.
- A widely used diagnostic test for HIV is enzyme linked immuno-sorbent assay (ELISA).
- Typhoid fever could be confirmed by Widal test.

12. Dobson Units (DU) are used to measure:

(1) Biodiversity index

(2) Thickness of ozone layer

(3) Sustainability index

(4) Thickness of canopy in rainforest

Answer (2)

Sol. The thickness of the ozone in a column of air from the ground to the top of the atmosphere is measured in terms of Dobson units (DU).

13. Identify the factor which does not affect the Hardy-Weinberg equilibrium?

(1) Genetic drift

(2) Natural selection

(3) Genetic recombination

(4) Genetic equilibrium

Answer (4)

Sol. Option (4) is the answer as, Hardy-Weinberg principle says that allele frequencies in a population are stable and constant from generation to generation. The gene pool remains a constant. This is called genetic equilibrium.

Options (1), (2) and (3) are not the answers as factors like-gene migration or gene flow, genetic drift, mutation, genetic recombination and natural selection affect Hardy-Weinberg equilibrium.

14. Antibiotic resistance gene in a vector helps in the selection of :

(1) Recombinant cells (2) Transformed cells

(3) Competent cells (4) Totipotent cells

Answer (2)

Sol. Option (2) is the answer as, antibiotic resistance gene in a vector acts as a selectable marker, which helps in identifying and eliminating non-transformants and selectively permitting the growth of the transformants.

Option (1) is not the answer as, selection of recombinants due to inactivation of antibiotics is a cumbersome procedure.

Option (3) is not the answer as, competent cells are the cells that can take up the foreign DNA from the surroundings by a process called transformation.

Option (4) is not the answer as, antibiotic resistance gene does not help in selection of totipotent cells.

15. Which of the following area is India's one of the biodiversity hot spots?

(1) Eastern Ghats

(2) Indo-Burma Plains

(3) Aravali Hills

(4) Indo-Gangetic Plains

Answer (2)

Sol. Biodiversity hotspot regions are with very high levels of species richness and high degree of endemism.

Western Ghats, and Sri Lanka, Indo Burma and Himalaya are biodiversity hotspots of India.

16. Sonalika and Ratna respectively are 'High Yielding Varieties' (HYV) of :

(1) Wheat and Rice (2) Rice and Wheat

(3) Maize and Rice (4) Wheat and Millet

Answer (1)

Sol. Sonalika is high yielding and disease resistant variety of wheat.

Better yielding semi-dwarf varieties of rice developed in India are Ratna and Jaya.

17. Match **List-I** with **List-II**

List-I		List-II	
(A)	Sterilized plant part	(I)	Pomato
(B)	Genetically similar plants	(II)	Virus free culture
(C)	Meristem	(III)	Somaclones
(D)	Somatic hybrids	(IV)	Explant

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (4)

Sol.
- Explant is the sterilised part of plant taken out and grown in a test tube in special nutrient media.
- Somaclones are produced through tissue culture that are genetically identical to the original plant from which they are produced.
- Virus free plant is obtained from meristem culture.
- Pomato is a somatic hybrid which is formed due to fusion of protoplast of tomato to potato.

Therefore, option (4) is correct.

18. The natural interconnections of food chain is :

(1) GFC

(2) DFC

(3) Food web

(4) Biomass

Answer (3)

Sol. The natural interconnection of food chain is called food web.

GFC is Grazing Food Chain

DFG is Detritus Food Chain

19. Agarose, a gel used as matrix in gel electrophoresis is a natural polymer which is extracted from:

(1) Soya bean (2) Sea weeds

(3) Sea anemone (4) Sea corals

Answer (2)

Sol. Option (2) is the answer as, the most commonly used matrix in gel electrophoresis is agarose, which is a natural polymer extracted from sea weeds.

Option (1) is incorrect as, agarose is not extracted from soya bean.

Options (3) and (4) are incorrect as, sea anemone and sea corals are coelenterates.

20. Identify the statements true for RNA.

(A) RNA acts as a genetic material for some viruses.

(B) RNA also functions as an adapter molecule.

(C) RNA has hexose sugar as its backbone.

(D) RNA also acts as catalyst in some cases.

Choose the **correct** answer from the options given below:

(1) (A), (B) and (C) only (2) (A), (B) and (D) only

(3) (B), (C) and (D) only (4) (A), (C) and (D) only

Answer (2)

Sol. RNA has ribose sugar as its backbone.

Statements A, B and D are correct.

21. Match **List I** with **List-II**

	List I		List II
A.	Ribosome	(I)	Replication
B.	Histone	(II)	Transcription
C.	DNA polymerase	(III)	Translation
D.	RNA polymerase	(IV)	Nucleosome

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (4)

Sol.
- Ribosome is required during translation.
- A negatively charged DNA is wrapped around positively charged histone octamer to form a structure called nucleosome.
- DNA polymerase enzymes are involved in DNA replication.
- DNA polymerase can catalyse transcription of all types of RNA in bacteria.

Therefore, option (4) is correct.

22. Which of the following is **NOT** a category of waste generated by human beings in daily practice?

(1) Radio-active waste

(2) Bio-degradable waste

(3) Plastic waste

(4) Non-biodegradable waste

Answer (1)

Sol. Radioactive waste is not generated by human beings in daily practice.

23. Select the correct statements regarding menstrual cycle in human female:

(A) The first menstruation begins at puberty and is called menopause.

(B) The ovulation takes place in the middle of cycle (about 14th day), when the level of progesterone is at maximum level.

(C) In absence of fertilisation, the corpus luteum degenerates which causes the disintegration of endometrium leading to menstruation.

(D) In human beings, menstrual cycle ceases around 50 years of age.

Choose the **correct** answer from the options given below:

(1) (A) and (B) only

(2) (B) and (D) only

(3) (A) and (C) only

(4) (C) and (D) only

Answer (4)

Sol. Option (4) is the correct answer as,
- The first menstruation begins at puberty and is called menarche.
- The ovulation takes place in the middle of cycle (about 14th day), when, LH surge occurs and the level of progesterone is low.
- In the absence of fertilisation, the corpus luteum degenerates; the level of progesterone hormone falls. This causes the disintegration of the endometrium leading to menstruation, marking a new cycle.
- In human beings, menstrual cycle ceases around 50 years of age.

24. The first instance of construction of an artificial recombinant DNA molecule was carried out on the plasmid of

(1) *Bacillus thuringiensis*

(2) *Escherichia coli*

(3) *Agrobacterium tumefaciens*

(4) *Salmonella typhimurium*

Answer (4)

Sol.
- Option (4) is the answer as, the construction of the first recombinant DNA emerged from the possibility of linking a gene encoding antibiotic resistance with a native plasmid of *Salmonella typhimurium.*
- Option (1) is incorrect as, Bt toxin produced by *Bacillus thuringiensis* is used in the production of pest resistance plants.
- Option (2) is incorrect as, plasmid of *E. coli* was used by Eli lily to produce human insulin.
- Option (3) is incorrect as, the Ti plasmid of *Agrobacterium tumefaciens* has been modified into a cloning vector for plants.

25. Identify the terminal method used to prevent pregnancy is:

(1) Lactational amenorrhea

(2) Sterilisation

(3) Intra Uterine Device

(4) Periodic abstinence

Answer (2)

Sol. Option (2) is the answer as, surgical methods, also called sterilisation, are generally advised for the male/female partner as a terminal method to prevent any more pregnancies.

Options (1) and (4) are incorrect as lactational amenorrhea and periodic abstinence are examples of natural method of contraception, whose chances of failure are high.

Option (3) is incorrect as IUDs are ideal contraceptives for the females who want to delay pregnancy and/or space children.

26. Single step large mutation leading to speciation is also called:

(1) Founder effect

(2) Saltation

(3) Branching descent

(4) Natural selection

Answer (2)

Sol. Option (2) is the answer of this question because single step large mutation is called saltation. Hugo de Vries stated mutation leading to speciation.

Branching descent and natural selection are two key concepts of Darwinism.

When one or a few individuals are dispersed and become the founders of a new isolated population at some distance from their place of origin, the alleles that they carry are of special significance.

Sometimes the change in allete frequency is so different in the new sample of population that they become a different species. The original drifted population becomes founders and this effect is called founder's effect.

27. Which of the following is **not** a cyanobacteria?

(1) *Nostoc*

(2) *Glomus*

(3) *Anabaena*

(4) *Oscillatoria*

Answer (2)

Sol. *Glomus* is a fungi which form symbiotic association with plants.

28. Common term used to refer the use of bio-resources by multinational companies and other organisations without proper authorisation and compensatory payment to the countries and people concerned is:

(1) Bio-informatics (2) Biopiracy

(3) Biopatenting (4) Biological theft

Answer (2)

Sol. Option (2) is the answer of this question because biopiracy is the term used to refer to the use of bioresources by multinational companies and other organisations without proper authorisation from the countries and people concerned without compensatory payment.

Option (1), (3) and (4) are not correct answer because Bioinformatics is defined as the application of tools of computation and analysis to the interpretation of biological data.

Biopatent is granted by the government to the inventor for biological entities and for products obtained from them.

29. Select the hormone which is **not** secreted by human placenta?

(1) Estrogen

(2) Progestogen

(3) Human chorionic gonadotropin

(4) Luteinising hormone

Answer (4)

Sol. Option (4) is the answer of this question because luteinising hormone is not secreted by placenta, it is secreted by anterior pituitary gland.

Option (1), (2) and (3) are not the answer of this question. Estrogen, progesterone and human chorionic gonadotropin are secreted by placenta.

30. Which of the following crop was made resistant to yellow mosaic virus and powdery mildew by mutation breeding?

(1) Cowpea

(2) Flat bean

(3) Mung bean

(4) *Brassica*

Answer (3)

Sol. Mutation breeding technique has been used to make Mung bean resistant against yellow mosaic virus and powdery mildew.

In mutation breeding, we use different types of mutagens like gamma radiations to induce the mutations for desired characteristics artificially.

31. Which of the following statements are **incorrect** regarding food chain?

(A) Primary carnivores are the tertiary consumers

(B) The flow of energy form the sun to producers and then to consumers is unidirectional

(C) The death of the organism is the initiation of detritus food chain

(D) Plant are the primary consumers as they utilise the solar energy for making food

Choose the **correct** answer from the options given below:

(1) (A) and (B) only (2) (A) and (D) only

(3) (B) and (C) only (4) (C) and (D) only

Answer (2)

Sol.
- Primary carnivores are secondary consumers while secondary carnivores are tertiary consumers.
- Utilising the solar energy for making food labels the plants as "producers", not consumers.

32. Out of the following which one is **not** a hermaphrodite?

(1) Sponge (2) Earthworm

(3) Leech (4) Cockroach

Answer (4)

Sol. Option (4) is the correct answer of this question because cockroach is unisexual organism.

Option (1), (2) and (3) are not the correct answer because sponge, earthworm and leech are hermaphrodite *i.e.* bisexual organisms.

33. Match List - I with List - II.

List – I		List – II	
(A)	Lippes loop	(I)	Barrier
(B)	Vaults	(II)	Hormone releasing device
(C)	Periodic abstinence	(III)	Non- medicated IUDs
(D)	Progestasert	(IV)	Natural method

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (3)

Sol. Option (3) is the correct answer of this question because Lippes loop is a non-medicated IUD.

Vaults are barriers.

Periodic abstinence is a natural method of contraception.

Progestasert is hormone releasing IUD.

Options (1), (2) and (4) are not the correct answer because they are incorrectly matched.

34. Arrange the following stages of development of a dicot embryo in the order of their occurrence:

(A) Formation of heart shaped embryo

(B) Formation of typical dicot embryo

(C) Formation of zygote

(D) Formation of globular embryo

Choose the **correct** answer from the options given below:

(1) (A), (B), (C), (D) (2) (C), (D), (A), (B).

(3) (C), (A), (B), (D) (4) (D), (A), (B), (C)

Answer (2)

Sol.
- Zygote is a pre-requisite for embryo development so zygote formation is the first stage
- Embryo development passes through further stages of globular embryo $\rightarrow$ heart shaped embryo $\rightarrow$ typical mature dicot embryo.

35. The statements are not true for allergy:

(A) Allergy is due to release of chemicals like histamine and serotonin

(B) Allergens are the substances which cause allergy

(C) The antibodies produced due to allergens are IgA type

(D) Adrenalin and steroids quickly enhance the symptoms of allergy

Choose the **correct** answer from the options given below:

(1) (C) and (D) only (2) (A) and (C) only

(3) (A) and (B) only (4) (B) and (D) only

Answer (1)

Sol. Option (1) is the correct answer of this question because both statements (C) and (D) are incorrect w.r.t. allergy.

Option (2), (3) and (4) are not correct because statements (A) and (B) are true for allergy.

The antibodies produced due to allergens are IgE.

Adrenalin and steroids quickly suppress the symptoms of allergy.

36. Paleontological evidences for evolution refers to:

(1) Development of embryo

(2) Homologous Organs

(3) Fossils

(4) Analogous Organs

Answer (3)

Sol. Option (3) is the correct answer of this question because paleontological evidences for evolution refers to fossils.

Option (1), (2) and (4) are not the correct answer because homologous organs and analogous organs provide morphological evidences for evolution and development of embryo provides embryological evidences for evolution.

37. In DNA N-glycosidic linkage is present between _____.

(1) Pentose sugar and Phosphate group

(2) A nitrogenous base and a Pentose sugar

(3) Two nitrogenous bases

(4) Two pentose sugars

Answer (2)

Sol. Option (2) is the correct answer of this question because in a DNA molecule, N-glycosidic linkage is present between a nitrogenous base and a pentose sugar.

Options (1), (3) and (4) are not the correct answer because pentose sugar and phosphate group linked together by easter bond.

Two nitrogenous bases join to each other by hydrogen bonds.

Tow pentose sugars join by glycosidic bond.

38. Which of the following is **not** a Mendelian Disorder?

(1) Haemophilia (2) Sickle-cell anaemia

(3) Down's Syndrome (4) Phenylketonuria

Answer (3)

Sol.
- Haemophilia is a sex-linked recessive Mendelian disorder.
- Sickle cell anaemia and Phenylketonuria are autosomal recessive Mendelian disorders.
- Down's syndrome is an aneuploidy chromosomal disorder.

39. Parthenogenesis does not occur in:

(1) Rotifers (2) Honeybees

(3) Lizards (4) Mammals

Answer (4)

Sol. Option (4) is the correct answer of this question because in mammal's, parthenogenesis does not occur.

Option (1), (2) and (3) are not the correct answer because parthenogenesis occurs in rotifers, honeybees and lizards.

40. The large holes in 'Swiss Cheese' are due to:

(1) Production of large amount of O_2

(2) Citric acid

(3) Production of large amount of CO_2

(4) Ethyl alcohol

Answer (3)

Sol. Fermentation process involved in the production of "Swiss Cheese" gives out CO_2 resulting in formation of large holes.

41. Read the given paragraph and answer the given question :

Parasitism has evolved in many taxonomic groups from plants to higher vertebrates. Many parasites have evolved to be host specific in such a way that both host and the parasite tend to co-evolve. In accordance with their life styles, parasite evolve special adaptations and complex life cycle.

Complex life cycle of parasites means:

(1) Having only one intermediate host

(2) Having special adaptations to cling on to the host

(3) Having many hosts

(4) Having one or two intermediate hosts to facilitate parasitisation of its primary host

Answer (4)

Sol. Complex life cycle of parasites involves one or two intermediate hosts to facilitate parasitisation of its primary hosts.

42. Read the given paragraph and answer the given question :

Parasitism has evolved in many taxonomic groups from plants to higher vertebrates. Many parasites have evolved to be host specific in such a way that both host and the parasite tend to co-evolve. In accordance with their life styles, parasite evolve special adaptations and complex life cycle.

Parasites harm the host by:

(1) Reducing its size

(2) Improving its growth and reproduction

(3) Reducing its survival, growth, reproduction and population density

(4) Improving its survival, growth and reproduction

Answer (3)

Sol. The impacts of parasites on hosts are as follows:

- They may reduce the survival of the hots.
- The may reduce the growth and reproduction of host.
- They may reduce host population density.
- They make the host physically weak.

43. Read the given paragraph and answer the given question :

Parasitism has evolved in many taxonomic groups from plants to higher vertebrates. Many parasites have evolved to be host specific in such a way that both host and the parasite tend to co-evolve. In accordance with their life styles, parasite evolve special adaptations and complex life cycle.

Match **List-I** with **List-II**.

	List-I		**List-II**
(A)	Cuckoo and Crow	(I)	Ectoparasite
(B)	Copepods	(II)	Commensal Organism
(C)	*Plasmodium*	(III)	Brood Parasitism
(D)	Orchids and Mango tree	(IV)	Endoparasite

Choose the **correct** answer from the options given below:

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

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

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

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

Answer (2)

Sol. Cukoo shows brood parasitism. It lays eggs in the nest of crow.

Copepods are ectoparasites on marine fishes.

Plasmodium, that causes malaria is an endoparasite in humans.

Orchids growing on the mango tree show commensalism.

44. Read the given paragraph and answer the given question :

Parasitism has evolved in many taxonomic groups from plants to higher vertebrates. Many parasites have evolved to be host specific in such a way that both host and the parasite tend to co-evolve. In accordance with their life styles, parasite evolve special adaptations and complex life cycle.

Identify the statements which are **not true** with respect to host parasite relationship.

(A) Host and parasite tend to co-evolve.

(B) Parasite have evolved elaborate nervous system for survival.

(C) If the host evolves to reject the parasite, the parasite also evolve to counteract them in order to be successful with the same host species.

(D) If the host evolves special mechanisms for rejecting the parasite, the parasite evolves to be successful in the another host species.

Choose the **correct** answer from the options given below :

(1) (A) and (B) only

(2) (C) and (D) only

(3) (B) and (D) only

(4) (A) and (C) only

Answer (3)

Sol. Parasites loss unnecessary sence organs. Many parasites are host-specific. If the host evolves special mechanisms for resistance against parasite, the parasite also evolves mechanism to counteract and nutralise them in order to be successful with the same host species.

45. Read the given paragraph and answer the given question :

Parasitism has evolved in many taxonomic groups from plants to higher vertebrates. Many parasites have evolved to be host specific in such a way that both host and the parasite tend to co-evolve. In accordance with their life styles, parasite evolve special adaptations and complex life cycle.

What are the intermediate hosts for human liver fluke?

(1) Snail and Fish

(2) Snail and fresh water mussel

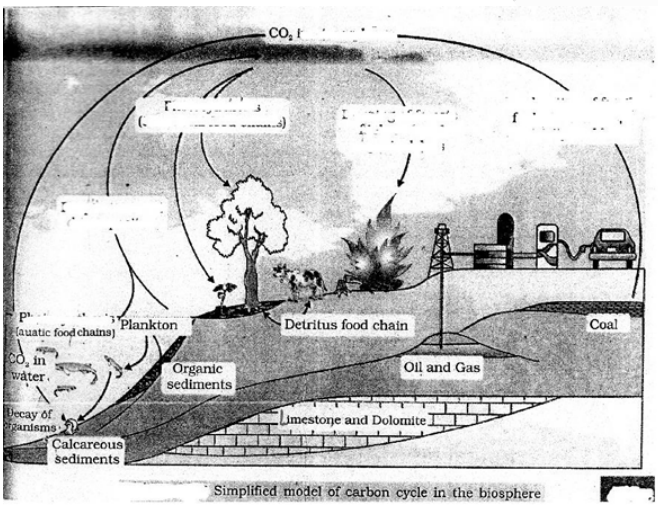
(3) Fish and Man

(4) Snail and Man

Answer (1)

Sol. The intermediate hosts for human liver fluke are snail and fish. Its larval stage is present in these hosts.

46. Observe the diagram and answer the given question.



Which of the following does not constitute the underground store of carbon?

(1) Limestone and Dolomite

(2) Oil and Gas

(3) Coal

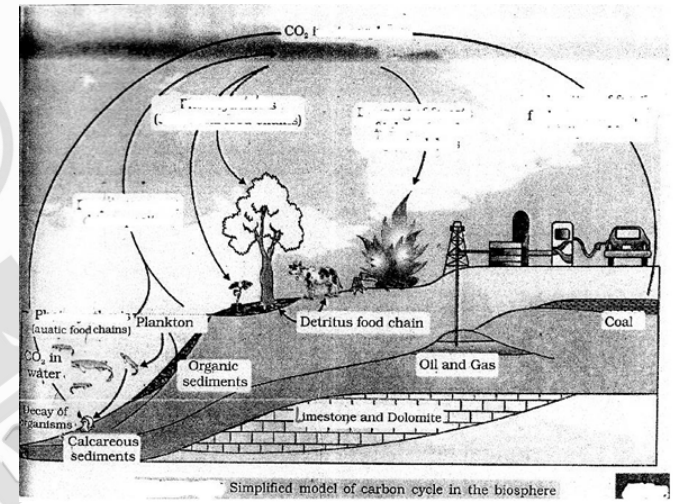
(4) CO_2

Answer (4)

Sol. Underground stores of carbon are in the form of carbonates such as limestone and dolomite. As organic forms carbon is present in fossil fuels such as oil and gas. Coal is also underground store of carbon.

CO_2 is present in atmosphere in gaseous form and also in dissolved state in oceans.

47. Observe the diagram and answer the given question.



Which of the following activities decrease the amount of CO_2 in atmosphere?

(1) Respiration

(2) Photosynthesis

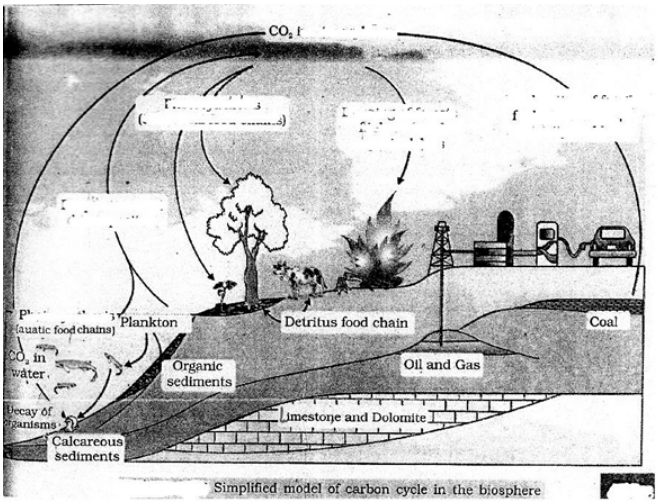
(3) Burning of forests

(4) Combustion of fossil fuels

Answer (2)

Sol. During photosynthesis, plants absorb CO_2 to synthesise their food. So, through this process the amount of CO_2 in the atmosphere decreases. Respiration, burning of forests and combustion of fossil fuels release CO_2 in the atmosphere and thus increase its concentration in the atmosphere.

48. Observe the diagram and answer the given question.



Simplified model of carbon cycle in the biosphere

Which of the following is another name given to nutrient cycling?

(1) Biological cycle

(2) Biogeological cycle

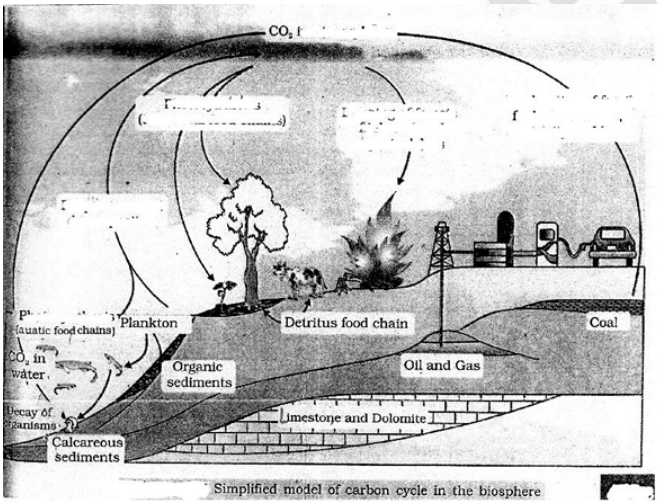
(3) Biogeochemical cycle

(4) Biochemical cycle

Answer (3)

Sol. Circulation or exchange of biogenetic nutrients between the living and non-living components is called nutrient cycle or biogeochemical cycle.

49. Observe the diagram and answer the given question.



Simplified model of carbon cycle in the biosphere

The amount of carbon dioxide in the atmosphere is regulated by which of the following?

(1) Plants

(2) Animals

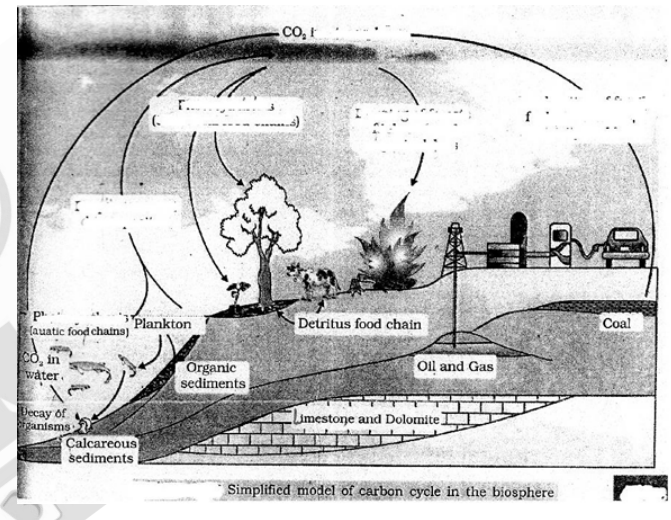
(3) Oceanic reservoir of carbon

(4) Burning of fossil fuels

Answer (3)

Sol. The oceanic reservoir regulates the amount of CO_2 in the atmosphere. Animals and burning of fossil fuels release carbon dioxide in the atmosphere.

50. Observe the diagram and answer the given question.



Simplified model of carbon cycle in the biosphere

The amount of nutrients such as carbon etc. present in soil at any specific time is referred to as

(1) Standing rate

(2) Standing state

(3) Nutrient rate

(4) Nutrient value

Answer (2)

Sol. The amount of nutrients, such as carbon, nitrogen, phosphorus, calcium etc., present in the soil at any given time is referred to as the standing state.

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