The Indian Academy
Nehrugram DEHRADUN
Question Bank – 2013-14
Subject - BIOLOGY
Class - X

VERY SHORT ANSWER QUESTIONS.

(Each question carries 1 mark)

1. Name the causative organism of syphilis disease.
2. Name the liquid that contains sperm.
3. Name the scientist who gave the theory of evolution.
4. Where did life originate on earth?
5. Name one extinct animal.
6. Name of the fossil bird which is link between bird and reptiles.
7. Name the functional unit of environment
8. A food chain represents a unidirectional flow of X. What is X?
9. Name of the program which has been started to replenish the forest by growing more trees
10. Name of ancient water harvesting structure of Himachal Pradesh.
11. On which Sardar Sarover Dam is situated ?
12. Name any fossil fuel.

SHORT ANSWER QUESTIONS.

(Each question carries 2 marks)

01.(a) What is garbage?

(b) What does it consist of?

02. (a) What is sewage?

(b) How is sewage disposed of?

03. Explain how harmful substance& chemicals reaches to our body.

04. What is biological magnification? With the help of food chain, explain how biological magnification of harmful chemicals can occur.
05. Write the names of important modes of waste disposal. Explain any two.
06. Calculate the amount of energy available to lion in the following food chain if plants have 2000 J O/S energy available from the sun

    Plants ⟶ Deer ⟶ Lion
07. We do not clean ponds or lakes but an aquarium needs to be cleaned periodically. Why?
08. (a) State one advantage of using jute bags over Plastic bags for shopping.

    (b) Write a common food chain of a pond ecosystem having four links.
09. What evidence do we have for the origin of life from inanimate matter (Lifeless matter).
10. Why are the small number surviving tigers a cause of worry from the point view of genetics.
11. Who coined the term chromosome? What does it literally mean?
12. Why did Mendel selected pea plants for experiment.
13. Describe various stakeholders in the management of natural resources.
14. Why should we converse wild life and forest
15. Suggest some measures for conservative of water.
16. State two difference between decompose and producers.
17. Define trophic level. Draw a food chain with four trophic levels
18. How is acid rain caused.
19. Why are the lists extra abdominal in the human male?
20. Name any two mechanical method of contraception.
21. Write full form of IUD. How does IUD help in 'Birth Control'.

22. Mention two advantage of vegetative reproduction.
23. Differentiate binary and multiple fission.
24. Differential pollination and fertilization

LONG ANSWER QUESTIONS.

(Each question carries 3 marks)

01. (a) Explain the term 'fertilization'.

    (b) Give example of different mode of fertilization.

    (c) What type of fertilization takes place in (i) Fish (ii) Bird

02. (a) What is puberty?

    (b) Who attain puberty at an earlier age in human being male or female.

    (c) Mention two functions of each of

        (i) human testes (ii) human ovaries

03. (a) Draw a neat sketch of the stamen of a flower. Mark in it filament and anther.

    (b) Draw neat sketch of the carpet. Mark in it stigma, style and ovary.

    (c)What is made in anther and ovary?

04. What are three types of methods used for birth control? Give one example of each type.

05. What are acquired and inherited traits? Explain with one example of each.

06. Can the wings of a butterfly and the wing of a bat be considered homologous organs?

    Why or Why not?

07. What is meant by a species? Give two examples of plant species and two of animals.

08. Write full form of CFC. Give its two harmful effects.

09. What is incineration? For what purpose it is used.

10. Write the harmful effect of ozone depletion. What would happen if ozone layer completely disappear.

11. Why there is a need to conserve fossil fuel?

12. What is sustainable development?

13. Is water conservation necessary? Explain

LONG ANSWER QUESTIONS.

(Each question carries 5 marks)

01.(a) What is meant by rainwater harvesting? Name some of the ancient structures used for rainwater harvesting.

(b) What are the various advantage of water stored in the ground?

02.(a) State the advantages of constructing dams across the river.

(b) Describe some of the problems associated to it.

03.(a) Describe three R's to save environment.

(b) Reuse is better than recycle.

04.(a) Flow of energy is unidirectional

(b) Describe 10% law.

05. Depletion of ozone layer is manmade. How?

06.(a) What is meant by biodegradable waste material? Give two example of Biodegradable water.

(b) Which of the following materials are non biodegradable?

07.(a) What is ozone? How is it formed?

(b) How does ozone layer protect us from harmful effects in the environment?

(c) What is UNEP? What step has been taken by UNEP in 1887 to prevent too much damage to ozone layer?

08.(a) Name the scientist who gave the theory of origin of life on earth. What is this theory.

(b) How are those species which are now extinct studied?

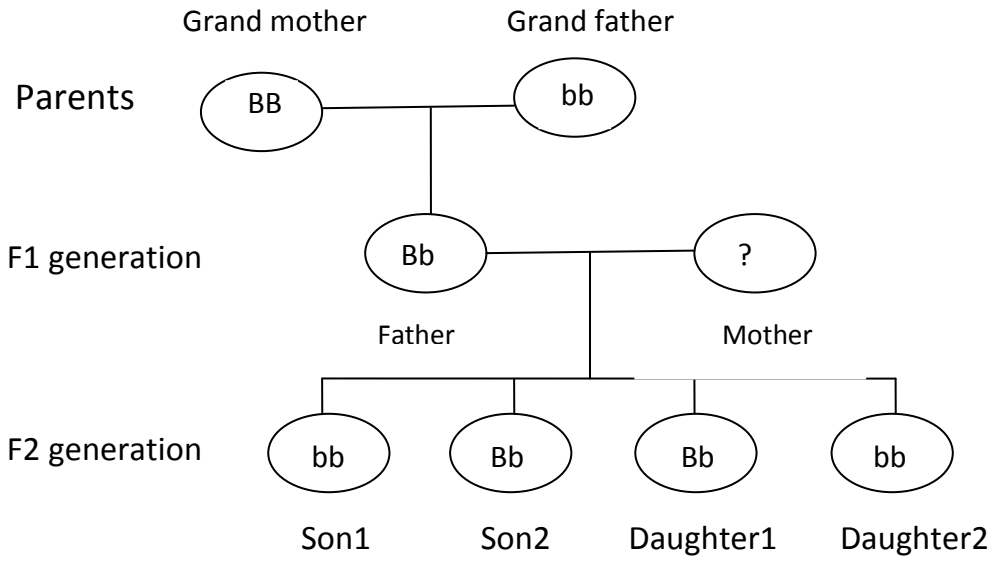
9(a) State Darwin theory of evolution.

(b) Explain the terms homologous and analogous with examples.

10.(a) Define Speciation. Explain Raw speciation occurs.

(b) Will geographical isolation be a major factor in the speciation of self pollinating plant Species? Give reason for your answer.

11. In human beings, the gene for blue eye (b) is recessive to the gene for brown eyes (B). The diagram below represents part of a pedigree chart in which some have brown eyes and some have blue eyes.



12. Hemophilia is more common in males than females. Give reasons

Multiple Choice Questions:-

Q1. The another contains:-
(a) Sepals (b) ovules (c) carpel (d) pollen grains

Q2. Which of the following is not a part of the female reproductive system in human beings?
(a) Ovary (b) Uterus (c) vas deferens (d) oviducts

Q3. One of the following is not a part of the human male reproductive system. This is:-
(a) Testis (b) oviduct (c) seminal vesicle (d) prostrate gland

Q4. Which of the following is not a sexually transmitted disease?
(a) Gonorrhoea (b)hepatitis (c) syphilis (d) AIDS

Q5. Which of the following method of contraception protects a person from acquiring a sexually transmitted disease?
(a) Oral pills (b) condom (c) copper-T (d) Surgery

Q6. In which one of the following birth control methods, a small portion of oviducts of a woman is removed by surgical operation and the cut ends are ligated?
(a) Copper-T (b) tubectomy (c) vasectomy (d) diaphragm

Q7. One of the following is a surgical method which prevents the sperms from reaching the ovum and pregnancy does not occur. This method is:-
(a) IUCD (b) vasectomy (c) condom (d) tubectomy

Q8. Fertilization results immediately in the formation of-
(a) A zygote (b) an embryo (c) a placenta (d) a foetus

Q9. Which one of the following best describes the function of the umbilical cord? It:-
(a) Feeds the embryo with digested substances.
(b) Conveys nutrients and wastes to and from the embryo respectively.
(c) Removes waste matter from the embryo to the mother's blood.
(d) Supplies oxygenated blood from the mother to the embryo.

Q10. The sexually transmitted disease which is caused by bacteria is-
(a) Malaria (b) diarrhea (c) gonorrhea (d) AIDS

Q11. AIDS is a deadly disease which is caused by:
(a) A protozoan (b) a fungus (c) a bacterium (d) a virus

Q12. The advantages that internal fertilization has over external fertilization is that in internal fertilization:-

(a) New off-springs are exactly like the parent
(b) Production of large numbers of gametes is unnecessary
(c) Copulation and fusion of gametes is passive
(d) Fewer individuals are produced

Q13. The figure given alongside shows the human male reproductive organs. Which structures make sperms and seminal fluid?

(a) V makes sperms and makes seminal fluid
(b) W makes sperms and Y makes seminal fluid
(c) X makes sperms and V makes seminal fluid
(d) Y makes sperms and V makes seminal fluid

Q14. In a flower, the parts that produce male and female gametes are respectively:-

(a) Sepal and anther (b) filament and stigma (c) anther and ovary (d) stamen and style

Q15. Which of the following is the correct sequence of events of sexual reproduction in a flower?

(a) Pollination, fertilization, seed, embryo
(b) Pollination, fertilization, embryo, seed
(c) Seed, embryo, fertilization, pollination
(d) Embryo, seed , pollination, fertilization

Q16. When two parents are crossed, the offspring are referred to as:-

(a) Recessives (b) test cross (c) F_1 generation (d) F_2 generation

Q17. A cross between two individuals results in a ratio of 9:3:3:1 for four possible phenotypes of progeny.

(a) Dihybrid cross (b) monohybrid cross (c) test cross (d) none of these

Q18. For his experiments on healthy, Mendel used:-

(a) Papaya plants (b) potato plants (c) pea plants (d) pear plants

Q19. The human animal which has an XY pair of chromosomes is called:-

(a) Male (b) hybrid (c) female (d) doomed

Q20. The science of heredity is known as:-

(a) Biology (b) embryology (c) genetics (d) biochemistry

Q21. A gene is a:-

(a) Hybrid
(b) heritable trait
(c) pure breed
(d) part of a chromosome that transmits a trait

Q22. A normal cell of human body contains 23 pairs of chromosomes. The number of chromosomes in a sex cell (sperm or ovum) of a human being is most likely to be:-

(a) 46 (b) 23 (c) 21 (d) 42

Q23. In order to ensure that he had pure-breeding plants for his experiments, Mendel:

(a) Cross-fertilised each variety with each other
(b) Let each variety self fertilise for several generations
(c) Removed the female parts of the plants
(d) Removed the male parts of the plants

Q24. In the human blood grouping , the four basic blood types are type A, type B, type AB, and type O. The blood proteins A and B are:-

(a) Simple dominant and recessive traits
(b) Codominant traits
(c) Incomplete dominant traits
(d) Sex-linked traits

Q25. A plant with two 'small' genes breeds with a plant with two 'tall' genes to produce:

(a) Small plants and tall plants in the ratio 1:3
(b) All tall plants
(c) All small plants
(d) Tall plants and small plants in the ratio 3:1

Q26. A pregnant woman has an equal chance of her baby being blood A or blood group AB. Which one of the following shows the possible genotypes of the woman and the father of her child?

(a) I^AI^A and I^BI^O
(b) I^AI^B and I^BI^O
(c) I^AI^O and I^BI^O
(d) I^AI^B and I^AI^O

Q27. The palisade cells of a species of plant contain 28 chromosomes. How many chromosomes will there be in each gamete produced by the plant?

(a) 56 (b) 28 (c) 14 (d) 4

Q28. Which of the following may be used to obtain an F_2 generation?

(a) allowing flowers on a parent plant to be self-pollinated
(b) allowing flowers on an F_1 plant to be self-pollinated
(c) cross-pollinating an F_1 plant with a parent plant
(d) cross-pollinating two parent plants

Q29. The sex of a child is determined by which of the following?

(a) the length of the mother's pregnancy
(b) the length of time between ovulation and copulation
(c) the presence of an X chromosome in an ovum
(d) the presence of a Y chromosome in a sperm

Q30. A zygote which has inherited an X chromosome from the father will develop into:

(a) baby boy (b) baby girl (c) adult (d) either boy or girl

Q31. If the ratio of each phenotype of the seeds of pea plants in the F_2 generation is 9:3:3:1, it is known as:

(a) tetrahybrid ratio (b) monohybrid ratio (c) dihybrid ratio (d) trihybrid ratio

Q32. In evolutionary terms, we have more in common with:

(a) a Chinese school boy (b) a chimpanzee (c) a spider (d) a bacterium

Q33. The human species has genetic roots in :-

(a) America (b) Africa (c) Australia (d) Antarctica

Q34. Which of the following gas was not present in early earth atmosphere?

(a) Ammonia (b) Oxygen (c) Hydrogen sulphide (d) Methane

Q35. A gradual change, over a long period, in a form of life is known as:-

(a) Erosion (b) evolution (c) revolution (d) evaluation

Q36. Scientists believe that all life originated in:-
(a) the sea (b) the soil (c) the ground (d) the air

Q37. According to scientists, aves have evolved from:
(a) mammals (b) amphibians (c) reptiles (d) arthropods

Q38. The theory of evolution of species by natural selection was given by:
(a) Mendel (b) Darwin (c) Dalton (d) Lamarck

Q39. The term 'father of genetics' is used for the scientist:
(a) Morgan (b) Mendel (c) Darwin (d) Marie Curie

Q40. One of the following traits cannot be inherited. This one is:
(a) Colour of eyes (b) colour of skin (c) size of body (d) nature of hair

Q41. Only one of the following characteristic of the parents can be inherited by their children. This one is:
(a) Deep scar on the chin (c) technique of swimming
(b) Snub nose (d) cut nose

Q42.the organs which perform different functions but have the same basic structure are known as:-
(a) Homologous organs (c) hemolytic organs
(b) Analogous organs (d) analytic organs

Q43. The organs which perform similar functions but have different basic structure are called:-
(a) Asymmetric organs (c) homologous organs
(b) analogous organs (d) homophonic organs

Q44. Wing of an insect and forelimb of a bird are:
(a) analogous organs (c) homologous organs
(b) analeptic organs (d) homophobic organs

Q45. If the fossil of an organism is found in the deeper layers of earth, then we can predict that:-
(a) the extinction of organism has occurred recently
(b) the extinction of organism has occurred thousands of years ago
(c) the fossil position in the layers of earth is not related to its time of extinction
(d) time of extinction cannot be determined

Q46. Which of the following statement is incorrect with respect to variations?
(a) all variations in a species have equal chance of survival
(b) change in genetic composition results in variations
(c) selection of variations by environmental factors forms the basis of evolutionary process
(d) variations are the minimum in sexual reproduction

Q47. What provides the energy which then flows through a food chain?
(a) Glucose (b) Oxygen (c) Respiration (d) Sunlight

Q48. Which pollutant released into the air during refrigeration and airconditioning is the greatest contributor to the depletion of ozone layer?
(a) BHC (b) DDT (c) CFC (d) UNEP

Q49. In the food chain given below, if the amount of energy available at fourth tropic level is 5 KJ, what was the energy available a the producer level?

Grass ⟶ Grasshopper ⟶ Frog ⟶ Snake ⟶ Hawk

(a) 500 KJ (b) 50KJ (c) 5000 KJ (d) 5 KJ

Q50. Which of the following limits the number of trophic levels in a food chain?
(a) Insufficient food supply from producer level
(b) Decrease in energy at higher trophic levels
(c) Increase in the number of organisms at higher trophic levels
(d) Accumulation of harmful chemicals at higher trophic levels

Q51. What percentage of sun's energy falling on the leaves of green plants is utilized by the plants in the process of photosynthesis and stored as chemical energy of food?
(a) 99 % (b) 10% (c) 1% (d) 20%

Q52. In an ecosystem, the ten percent energy available for transfer from one trophic level to the next is in the form of:
(a) Heat energy (b) light energy (c) chemical energy (d) mechanical energy

Q53. The excessive exposure of humans to ultraviolet rays results in:
i. Damage to immune system
ii. Skin cancer
(iii) damage to lungs
(iv) peptic ulcers

(a) (i) and (ii) (b) (ii) and (iv) (c) (i) and (iii) (d) (iii) and (iv)

Q54. A food chain comprises of cat, seed-eating bird, plants, and dog. The organism which will have the maximum concentration of harmful pesticides coming through the food chain is most likely to be:-
(a) Cat (b) plants (c) dog (d) seed-eating bird

Q55. If the energy available at the producer level in a food chain is 150 J, how much energy will be transferred to : tertiary consumer?
(a) 15 J (b) 10 J (c) 1.50 J (d) 0.15 J

Q56. In an ecosystem:
i. the flow of energy is unidirectional
ii. he flow of materials is unidirectional
iii. the flow of materials is cyclic
iv. the flow of energy is cyclic
(a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iv) (d) (i) and (iii)

Q57. The ten percent law is associated with
(a) transfer of energy from various trophic levels to decomposers in a food chain
(b) transfer of ATP energy into muscular energy
(c) transfer of chemical energy from one organism to another
(d) transfer of sun's energy to the organisms called producers

Q58. The harmful chemical which is accumulating in human beings through food chain is:
(a) benzenehexachloride (c) dichlorodiphenyltrichloroethane
(b) chlorofluorocarbon (d) abscisic acid

Q59. O_2 is converted into O_3 by the action of:-
(a) infrared radiations (c) ultraviolet radiations
(b) gamma radiations (d) cosmic radiations

Q60. Which of the following cannot be added in a composting pit to prepare compost?
(a) Sunflower plants (c) fruit and vegetable compost

(b) Flowers of plastic (d) red worms

Q61. The Bishnoi community of Rajasthan is associated with the conversion of:-
(a) Coal and petroleum (c) water resources
(b) Forests and Wildlife (d) abiotic environment

Q62. The Chipko Andolan is associated with:-
(a) Tigers (c) Trees
(b) Turtles (d) Tomatoes

Q63. Amrita Devi Bishnoi was associated with:-
(a) Preventing the custom of child marriage in Rajasthan
(b) Conservation of cultural heritage of Rajasthan
(c) Compaign to save the girl child
(d) Conservation of forests and wildlife

Q64. One of the following is not a direct stakeholder I the management (or conservation) of forests. This is:
(a) The people who have paper mills
(b) The people who compaign for the conservation of forests
(c) The people who run the forest department
(d) The people who live in Urban areas

Q65. The river water is daid to be polluted with acidic wastes if the PH of river water is:-
(a) Zero (c) below 7
(b) Above 7 (d) exactly 7

Q66. The major programme started to replenish the damaged forests is called:
(a) Horticulture (c) agriculture
(b) Tissue culture (d) silviculture

Q67. With which tree Amrita Devi Bishnoi is associated?
(a) Khajoor (c) Khejri
(b) Khejrali (d) Keekar

Q68. One of the following does not contribute in producing acid rain. This one is:
(a) Sulphur dioxide (c) nitrogen oxides
(b) Carbon dioxide (d) carbon monoxide

Q69. The poisonous gas which reduces the oxygen-carrying capacity of blood to a large extent is:
(a) SO_2 (b) NO (c) CO (d) CO_2

Q70. Which of the following is not an ancient water harvesting structure?
(a) Kattas (b) Sargam (c) Kulhs (d) Surangams

Q71. Snakes are killed in large numbers because:
(a) They are very poisonous (c) they kill rats
(b) Their skin is expensive (d) they damage the crops

Q72. Which of the following is not a fossil fuel?
(a) LPG (b) natural gas (c) biogas (d) CNG

Q73. Which of the following is not a natural resource?
(a) Soil (b) water (c) electricity (d) natural gas

Q74. The most rapidly dwindling natural resource in the world is:-

(a) Water (b) soil (c) sunlight (d) forests

Q75. Which of the following is not a natural resource?

(a) Snake (b) wind (c) wooden house (d) mango tree