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CBSE 12th Biology 2015 Unsolved Paper Outside Delhi

TIME - 3HR. | QUESTIONS - 26

THE MARKS ARE MENTIONED ON EACH QUESTION

SECTION-A

- Q. 1.** How many chromosomes do drones of honeybee possess? Name the type of cell division involved in the production of sperms by them. *1 marks*
- Q. 2.** What is a Cistron? *1 marks*
- Q. 3.** Retroviruses have no DNA. However, the DNA of the infected host cell does possess viral DNA. How is it possible? *1 marks*
- Q.4.** Why do children cured by enzyme-replacement therapy for adenosine deaminase deficiency need periodic treatment? *1 marks*
- Q. 5.** List two advantages of the use of unleaded petrol in automobiles as fuel. *1 marks*

SECTION-B

- Q. 6.** why do moss plants produce very large number of male gametes? provide one reasons. What are these gametes called? *2 marks*
- Q. 7.** (a) Select the homologous structures from the combinations given below:
(i) Forelimbs of whales and bats
(ii) Tuber of potato and sweet potato
(iii) Eyes of octopus and mammals
(iv) Thorns of Bougainvillea and tendrils of Cucurbita.
(b) State the kind of evolution they represent. *2 marks*
- Q. 8.** (a) Why are the plants raised through micropropagation termed as somaclones?
(b) Mention two advantages of this technique. *2 marks*
- Q. 9.** Explain the different steps involved during primary treatment phase of sewage. *2 marks*
- Q. 10.** What is mutualism? Mention any two examples where the organisms involved are commercially exploited in agriculture. *2 marks*

OR

List any four techniques where the principle of ex-situ conservation of biodiversity has been employed.

SECTION-C

Q. 11. State what is apomixis. Comment on its significance. How can it be commercially used? *3 marks*

Q. 12. During a monohybrid cross involving a tall pea plant with a dwarf pea plant, the offspring populations were tall and dwarf in equal ratio. Work out a cross to show how it is possible. *3 marks*

Q. 13. Explain the significance of satellite DNA in DNA fingerprinting technique. *3 marks*

Q. 14. What does the following equation represent? Explain. *3 marks*
$$p^2 + 2pq + q^2 = 1$$

Q. 15. A heavily bleeding and bruised road accident victim was brought to a nursing home. The doctor immediately gave him an injection to protect him against a deadly disease. *3 marks*

(a) write what did the doctor inject into the patient's body.

(b) How do you think this injection would protect the patient against the disease?

(c) Name the disease against which this injection was given and the kind of immunity it provides.

Q. 16. Enumerate any six essentials of good, effective Dairy Farm Management Practices. *3 marks*

Q. 17. State the medicinal value and the bioactive molecules produced by Streptococcus, Monascus and Trichoderma. *3 marks*

OR

What are methanogens? How do they help to generate biogas?

Q. 18. Rearrange the following in the correct sequence to accomplish an important biotechnological reaction: *3 marks*

(a) In vitro synthesis of copies of DNA of interest

(b) Chemically synthesized oligo-nucleotides

(c) Enzyme DNA-polymerase

(d) Complementary region of DNA

(e) Genomic DNA template

(f) Nucleotides provided

(g) Primers

(h) **Thermostable DNA-polymerase (from *Thermus aquaticus*)**

(i) **Denaturation of ds-DNA**

Q. 19. Describe any three potential applications of genetically modified plants. 3 marks

Q. 20. How did an American Company, Eli Lilly use the knowledge of r-DNA technology to produce human insulin? 3 marks

Q. 21. How do snails, seeds, bears, zooplanktons, fungi and bacteria adapt to conditions unfavorable for their survival?

Q.22. Explain the function of each of the following: 3 marks

(a) **Coleorhiza** (b) **Umbilical cord** (c) **Germ pores**

SECTION-D

Q. 23. Your school has been selected by the Department of Education to organize and host an interschool seminar on "Reproductive Health - Problems and Practices". However, many parents are reluctant to permit their wards to attend it. Their argument is that the topic is "too embarrassing." Put forth four arguments with appropriate reasons and explanation to justify the topic to be very essential and timely. 4 marks

SECTION-E

Q.24. (a) Plan an experiment and prepare a flow chart of the follow steps that you would to ensure that the seeds are formed only from the desired sets of pollen grains. Name the type of experiment that you carried out.

(b) Write the importance of such experiments. 5 marks

OR

Describe the roles of pituitary and ovarian hormones during the menstrual cycle in a human female.

Q. 25. (a) Why are thalassemia and haemophilia categorized as Mendelian disorders? write the symptoms of these diseases. Explain their pattern of inheritance in humans.

(b) write the genotypes of the normal parents producing a haemophilic son. 5 marks

OR

How do m-RNA, t-RNA and ribosomes help in the process of translation?

Q. 26. (a) List the different attributes that a population has and not an individual organism.

(b) What is population density? Explain any three different ways the population density can be measured, with the help of an example each. 5 marks

OR

"It is often said that the pyramid of energy is always upright. On the other hand, the pyramid of biomass can be both upright and inverted." Explain with the help of examples and sketches.

