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# CBSE 12th Biology 2012 Unsolved Paper Delhi Board

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# CBSE 12th Biology 2012 Unsolved Paper Delhi Board

TIME - 3HR. | QUESTIONS - 30

THE MARKS ARE MENTIONED ON EACH QUESTION

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## SECTION – A

- Q.1. Mention the unique flowering phenomenon exhibited by *Strobilanthus Kunthiana* (*neelakuranaji*). *1 mark***
- Q. 2. How does smoking tobacco in human lead to oxygen deficiency in their body? *1 mark***
- Q. 3. A garden pea plant (A) Produced inflated yellow pod, and another plant (B) of the same species produced constricted green pods. Identify the dominant traits. *1 mark***
- Q.4. Why is *Eichhornia crassipes* nicknamed as "Terror of Bengal"? *1 mark***
- Q. 5. Write the location and function of the sertoli cells in humans. *1 mark***
- Q.6. Name the following: *1 mark***  
(a) The semi-dwarf variety of wheat which is high-yielding and disease-resistant.  
(b) Any one inter-specific hybrid mammal.
- Q. 7. Write the similarity between the wing of a butterfly and the wing of a bat  
What do you infer from the above with reference to evolution? *1 mark***
- Q. 8. Write what do phytophagous insects feed on. *1 mark***

## SECTION – B

- Q. 9. Draw a neat labelled sketch of a replicating fork of DNA. *2 marks***
- Q. 10. Where is sporopollenin present in plants? State its significance with reference to its chemical nature. *2 marks***
- Q. 11. (a) Highlight the role of thymus as a lymphoid organ.**

**(b) Name the cells that are released from the above-mentioned gland. Mention how they help in immunity. 2 marks**

**Q. 12. Explain the work carried out by Cohen and Boyer that contributed immensely in biotechnology. 2 marks**

**Q. 13. Why do clown fish and sea anemone pair up? What is this relationship called? 2 marks**

**Q. 14. (a) State the difference between meiocyte and gamete with respect to chromosome number. 2 marks**

**(b) Why is a whiptail lizard referred to as parthenogenetic? 2 marks**

**Q. 15. Name the plant source of the drug popularly called “smack”, How does it affect the body of the abuser?**

**OR**

**Why is Rhizobium categorized as a 'symbiotic bacterium, How does it act as a biofertiliser?**

**Q. 16. (a) State the role of DNA ligase in biotechnology. 2 marks**

**(b) What happens when Meloidegyne incognitia consumes cells with RNAi gene?**

**Q. 17. Some organisms suspend their metabolic activities to survive in unfavorable conditions. Explain with the help of any four examples. 2 marks**

**Q. 18. (a) Name the Protozoan parasite that causes amoebic dysentery in humans. 2 marks**

**(b) Mention two diagnostic symptoms of, the disease.**

**(c) How is this disease transmitted to others?**

**SECTION – C**

**Q. 19. It is established that RNA is the first genetic material. Explain giving three reasons. 3 marks**

**OR**

**(a) Name the enzyme responsible for the transcription of tRNA and the amino acid the initiator tRNA gets linked with.**

**(b) Explain the role of initiator tRNA in initiation of protein synthesis.**

**Q. 20. State the theory of Biogenesis. How does Miller's experiment support this theory? 3 marks**

**Q. 21. Name the two different categories of microbes naturally occurring in sewage water. Explain their role in cleaning sewage water into usable water. 3 marks**

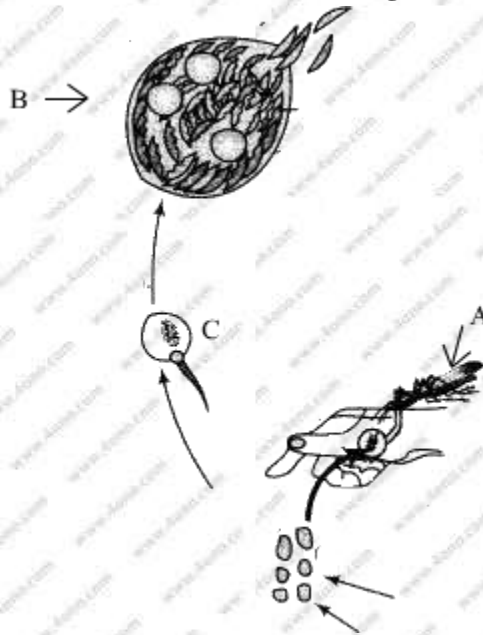
**Q.22. Write the function of each one of the following: 3 marks**

- (a) (Oviducal) Fimbriae
- (b) Coleoptile
- (c) Oxytocin

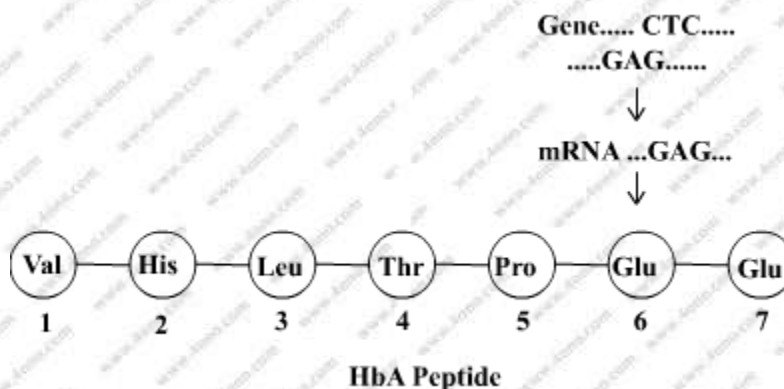
**Q. 23. Name the genes responsible for making Bt cotton plants resistant to bollworm attack. How do such plants attain resistance against bollworm attacks? Explain. 3 marks**

**Q.24. Study a part of the life cycle of malarial parasite given below. Answer the questions that follows: 3 marks**

- (a) Mention the roles of 'A' in the life cycle of the malarial parasite.
- (b) Name the event 'C' and the organ where this event occurs.
- (c) Identify the organ 'B' and name the cells being released from it.



**Q. 25. Given below is the representation of amino acid composition of the relevant translated portion of  $\beta$  -chain of hemoglobin, related to the shape of human red blood cells. 3 marks**



- (a) Is this representation indicating a normal human or a sufferer from certain related genetic disease? Give reason in support of your answer.
- (b) What difference would be noticed in the phenotype of the normal and the sufferer related to this gene?
- (c) Who are likely to suffer more from the defect related to the gene represented the males, the females or both males and females equally? And why?

**Q. 26.** By the end of 2002 the public transport of Delhi switched over to a new fuel. Name the fuel. Why is this fuel considered better? Explain. *3 marks*

**Q.27.** Draw a schematic sketch of pBR 322 plasmid and label the following in it: *3 marks*

- (a) Any two restriction sites.
- (b) Ori and rop genes.
- (c) An antierotic resistant gene.

**SECTION – D**

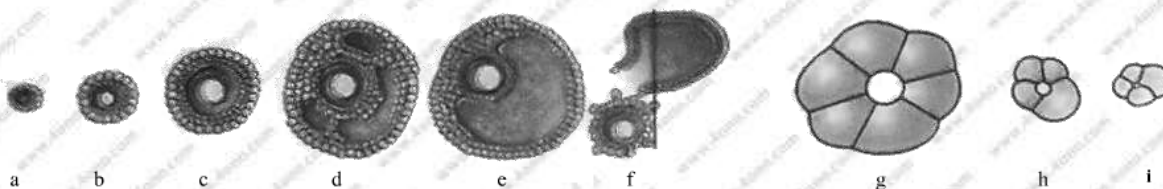
**Q. 28.** Explain the carbon cycle with the help of a simplified model. *5 marks*

**OR**

**Explain how does:**

- (a) a primary succession start on a bare rock and reach a climax community?
- (b) the algal bloom eventually choke the water body in an industrial area?

**Q. 29.** The following is the illustration of the sequence of ovarian events (a - i) in a human female. *5 marks*



- (i) Identify the figure that illustrates ovulation and mention the stage of oogenesis it represents.
- (ii) Name the ovarian hormone and the pituitary hormone that have caused the above-mentioned event.
- (iii) Explain the changes that occur in the uterus simultaneously in anticipation.
- (iv) Write the difference between 'c' and, h'.
- (v) Draw a labelled sketch of the structure of a human ovum prior to fertilization.

OR

How does the megaspore mother cell develop into 7'celled, 8 nucleate embryo sac in an angiosperm? Draw a labelled diagram of a mature embryo sac.

**Q. 30.** What is the inheritance pattern observed in the size of starch grains and seed shape of *Pisum sativum*? Work out the monohybrid cross showing the above traits. How does this pattern of inheritance deviate from that of Mendelian law of dominance? *5 marks*

OR

- (a) State the aim and describe Messelson and Stahl's experiment.
- (b) What did Meselson and Stahl conclude from this experiment? Explain with the help of diagram.
- (c) Which is the first genetic material? Give reasons in support of your answer.

