

GURU GOBIND SINGH PUBLIC SCHOOL

Sector-5B, B. S. City

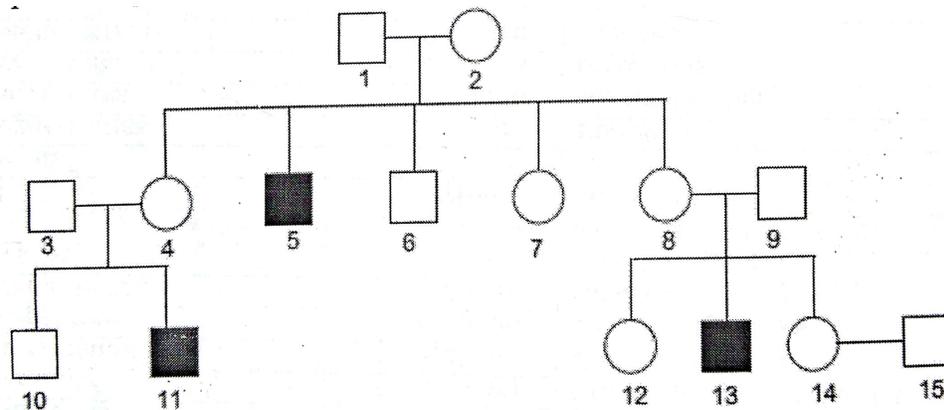
2ND PRE BOARD REVISION ASSIGNMENT 2018 – 19

CLASS – XII

Subject : BIOLOGY

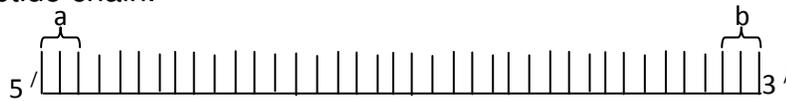
1. Identify the reason for selection of DNA polymerase from *Thermus aquaticus* for polymerase chain reaction.
2. Write the names of the following :-
 - a) A 15 mya primate that was ape-like
 - b) A 2 mya primate that lived in East African grasslands.
3. A male honeybee has 16 chromosomes whereas its female has 32 chromosomes. Give one reason.
4. A mother of one year old daughter wanted to space her second child. Her doctors suggested CuT. Explain its contraceptive actions.
5. A number of passengers were severely burnt beyond recognition during a train accident. Name and describe a modern technique that can help to hand over the dead to their relatives.
6. How do Darwin's finches illustrate adaptive radiation.
7. Write the scientific name of the soil bacterium which produces cry proteins. How are these proteins useful in agriculture.
8. Explain outbreeding, outcrossing and crossbreeding practices in animal husbandry.
9. List the causal organism, symptoms (any three), mode of contamination of the following diseases – a) Amoebiasis b) Ascariasis c) Filariasis
10. What is hnRNA? Explain the changes hnRNA undergoes during its processing to form mRNA.
11. Explain the zygote intra fallopian transfer technique (ZIFT). How is intra uterine transfer technique (IUT) different from it?
12. Why does endosperm development precede embryo development in angiosperm seeds, state the role of endosperm in mature albuminous seeds.
13. Explain giving two reasons why pollen grains can be best preserved as fossils.
14. Give reasons why :-
 - i) Most zygote in angiosperms divide only after certain amount of endosperm is formed.
 - ii) Micropyle remains as a small pore in the seed coat of a seed.
 - iii) Integuments of an ovule harden and the water content is highly reduced, as the seed matures.
15. Why is pedigree analysis done in the study of human genetics? State the conclusions that can be drawn from it.
16. What is polygenic inheritance? Skin colour in human is an example of polygenic inheritance. Justify this statement.
17. How has the use of *Agrobacterium* as vectors helped in controlling *Meloidogyne incognita* infestation in tobacco plants? Explain in correct sequences.
18. Forensic department was given three blood samples. Write the steps of the procedure carried to get the DNA finger printing done for the above sample.

19. a) Why is an antibody represented as L₂H₂?
b) Name the types of cell the AIDS virus first enters into after getting inside human body. Explain the sequence of events that virus undergoes within these cells to increase their progeny.
20. Trace the life cycle of material parasite in the human body.
21. Mention the product produced and its use by each of the microbes listed below :
a) Streptococcus b) Lactobacillus, c) Monascuspurpureus
22. How is Bt cotton plant created as a GM Plant? How is it protected against bollworm infestation?
23. A. Who performed 'Blender' experiment with respect to DNA? What was the objective of this experiment? Explain the procedure in detail.
24. i) Who explained the 'transforming principle' in an organism? How did the scientist perform the experiment to explain this principle?
ii) How was the biochemical nature of the transforming material determined? Explain.
25. Morgan carried out several crosses in Drosophila and found F₂ ratio deviated very significantly from the expected Mendelian ratio. Explain his finding with the help of an example.
26. Determination of Biological Oxygen Demand(BOD) can help in suggesting the quality of a water body. Explain.
27. Haemophilia is a sex linked recessive disorder of humans .The pedigree chart given below shows the inheritance of Haemophilia in one family. Study the pattern of inheritance and answer the questions given



- (a) Give all the possible genotypes of the members 4,5 and 6 in the pedigree chart.
- (b) A blood test shows that the individual 14 is a carrier of haemophilia. The member numbered 15 has recently married the member numbered 14. What is the probability that their first child will be haemophilic male? Show with the help of Punnett square.
28. The Indian Government refuted the attempt by a multinational company (MNC) to patent the antiseptic property of curcumin derived from Turmeric .Analyze the unethical practice adopted by the MNC, state its implications and suggest provisions in the Indian Law to prevent such malpractices.
29. Why are thalassemia and hemophilia categorized as Mendelian disorder? Write the symptoms of these diseases. Explain the pattern of inheritance in human

30. Study the mRNA segment given below which is complete to be translated in a polypeptide chain.



- a) Write the codon a and b
b) What do they code for.
c) How is peptide bond formed between two amino acids?
31. What is protoplast? Describe the steps involved in producing somatic hybrid. Mention the use of somatic hybridization.
32. Name the selectable markers in the cloning vectors pBR322? Mention the role they play.
33. How is the amplification of a gene sample of interest carried out using PCR?
34. DDT content in the water body that supplies drinking water to the nearby villages, is found to be 0.003PPM. The kingfishers of that area were reported to have 2ppm of DDT. Why has the concentration increased in these birds? What harm will this cause to the bird population? Name the phenomenon.
35. Explain the cause of algal bloom in the water body. How does it affect an ecosystem?
36. What is meant by ecological succession? How does it occur? Explain
37. Differentiate between primary and secondary succession.
38. One of the best known applications of biotechnology is the production of pest resistant plants. How is this achieved in Bt Cotton?
39. (a) What will happen if the electrostatic precipitator of a thermal plant fails to work? (b) Mention any four methods by which the vehicular air pollution can be controlled.
40. Explain the ovarian and uterine events that occur during a menstrual cycle in a human female, under the influence of pituitary and ovarian hormones respectively.
41. How are the DNA segments separated and isolated for DNA fingerprinting? Explain.
42. Differentiate between parthenogenesis and parthenocarpy. Give one example of each.
43. Explain the mechanism of sex determination in birds. How does it differ from that of human beings?
44. State the central dogma as proposed by Francis Crick. Are there any exceptions to it? Support your answer with areas on and an example.
45. Describe the process of transcription in prokaryote.
46. What is nucleosome? Describe the structure of nucleosome in eukaryote.
47. What is amniocentesis? Why has the government banned amniocentesis?
48. What is BOD and COD? What is the relationship between BOD and dissolved oxygen in an aquatic body? Show with graph.
49. What is ozone depletion? What are its harmful effects on human health?
50. Describe the life cycle of Plasmodium. What is the infective stage of Plasmodium for female Anopheles mosquito and human?