GURU GOBIND SINGH PUBLIC SCHOOL

Sector-5B, B. S. City

HALF YEARLY REVISION ASSIGNMENT 2018

Sub: BIOLOGY **CLASS – XII** **LEVEL – I**

1. Name the material used as matrix in gel electrophoresis and mention its role.
2. Identify the reason for selection of DNA polymerase from Thermus aquatics for polymerase chain reaction.
3. Given an example of an organism that exhibit xo-type of sex determination. What is this sex determination designated as?
4. At what ends do capping and tailing of hnRNA occurs respectively?
5. 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.
6. A male honeybee has 16 chromosomes whereas its female has 32 chromosomes. Give one reason.
7. Name the embryonic stage that gets implanted in the uterine wall of a human female.
8. Name any two types of cells which act as cellular barriers to provide innate immunity in humans.
9. A mother of one year old daughter wanted to space her second child. Her doctors suggested cuT. Explain its contracepative actions.
10. Mention the site where fertilization occurs in amphibians and reptiles respectively.
11. Trace the development of female gametophyte in angiospermic plant.
12. Trace the development of male gametophyte in angiospermic plant.
13. Why is ‘Saheli’ considered to be an improved form of oral contracepative for human female?
14. Why does corpus luteum secret large amount of progesterone during luteal/secretary phase of the menstrual cycle?
15. A garden pee plant bearing terminal violet flowers when crossed with another pea plant bearing axial violet flower, produced axial violet flower and axial while flowers in the ratio of 3:1 work out the cross showing the genotypes of the parent pea plants and their progeny.
16. A tall pea plant with yellow seeds (heterozygous for both the traits) is crossed with a dwarf pea plant with green seeds. Using a punnett square workout the cross to show the phenotype and the genotypes of F1 generation.
17. 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.
18. How do Darwin’s finches illustrate adaptive radiation.
19. How is it possible to recover healthy banana plant from a diseased but desirable quality banana plant? Explain.
20. State the medicinal value and the bioactive molecules produced by streeptococcus, monascus and trichoderma.
21. a) List the three steps involved in polymerase chain reaction (PCR).
    b) Name the source organism of Taq polymerase. Explain the specific role of this enzyme inPCR.

22. Nematode specific genes are introduced into the tobacco plants using Agrobacterium vectors to develop resistance in tobacco plants against nematodes. Explain the events that occurs in tobacco plant to develop resistance.
23. Write the scientific name of the soil bacterium which produces cry proteins. How are these proteins useful in agriculture.
24. How did an American company Eli Lilly use the knowledge or r-DNA technology to produce human insulin.
25. Name and describe the technique that helps in separating the DNA fragments formed by the use of restriction endonuctease.
26. Secondary treatment of the sewage is also called as Biological treatment. Justify this statement and explain the process.
27. Explain outbreeding, outcrossing and crossbreeding practices in animal husbandry.
28. Expand MOET. Explain the procedure of this technology in cattle improvement.
29. List the causal organism, symptoms (any three), mode of contamination of the following diseases – a) Amoebiasis b) Ascariasis c) Filariasis
30. Write the sequence of human ancestors with his time of origin and cranial capacity.
31. Differentiate between the explanation given by Darwin and de veris respectively on the mechanism of evolution.
32. One of the codons on mRNA is AUG. Draw the structure of tRNA adaptor molecule for this codon. Explain the uniqueness of this tRNA.
33. What is hnRNA? Explain the changes hnRNA undergoes during its processing to form mRNA.
34. Unambiguous, universal and degenerate are some of the terms used for the genetic code. Explain the salient features of each of them.
35. Explain the zygote intra fallopian transfer technique (ZIFT). How is intra uterine transfer technique (IUT) different from it?
36. Explain the events taking place at the time of fertilization of an ovum in human female. Name and draw a labelled sectional view of the embryonic stage that gets implanted.
37. i) Draw a sectional view of seminiferous tubule of a human. Label the following cells in the seminiferous tubule :-
    a) Cells that divide by mitosis to increase their number.
    b) Cells that undergo meiosis I
    c) Cells that undergo meiosis II
    d) Cells that help in the process of spermiogenesis.
38. Describe how the changing levels of FSH, LH and progesterone during menstrual cycle induce changes in the ovary and the uterus in human female.
39. Why does endosperm development precede embryo development in angiosperms seeds, state the role of endosperm in mature albuminous seeds.
40. Explain the process of artificial hybridisation to get improved crop variety in i) plants bearing bisexual flowers ii) female parent producing unisexual flowers.
41. a) Describe any two devices in a flowering plant which prevents both antogamy and geitonogamy.
    b) Explain the events upto double fertilization after the pollen tube enters one of the synergids in an ovule of an angiosperm.

42. a) Explain menstrual cycle in human females.
b) How can the scientific understanding of the menstrual cycle of human females help as a contraceptive measure?

43. a) State the 'central dogma' as proposed by Francis crick. Are there any exceptions to it? Support your answer with a reason and an example.
b) Explain how the biochemical characterization (nature) of 'Transforming Principle' was determined, which was not defined from Griffith's experiment.

44. a) Draw a diagrammatic sectional view of human ovary showing different stages of cogenesis along with corpus luteum.
b) Where is morula formed in human? Explain the process of its development from zygote.

45. a) Draw a schematic labeled diagram of a fertilized embryo sac of an angiosperm.
b) Describe the stages of embryo development in dicot embryo.

46. a) Draw a labelled diagram of a sectional view of human seminiferous tubule.
b) Differentiate between gametogenesis in human males and females on the basis of i) time of initiation of process.
ii) Products formed at the end of the process.

47. ABO blood grouping in human population exhibits four possible phenotypes from six different genotypes. Explain different mechanisms of inheritance involved in exhibiting the possibility of four phenotypes and six genotypes.

48. When and where are primary occytes formed in human female? Trace the development of these oocytes till ovulation (in menstrual cycle). How do gonadotropins influence this developmental process?

49. a) Write the scientific name of the organism Thomas Hunt Morgan and his colleagues worked with for experiments. Explain the correlation between linkage and recombination with respect to genes as studied by them.
b) How did sturtevent explain gene mapping while working with Morgan.

50. a) How did Hershey and chase arrive at the conclusion that DNA is genetic material.
b) Describe Meselson and stahl's experiment to prove that DNA replication is semiconservative.