

GOVIND VIDYALAYA, TAMULIA

BIOLOGY (SET I)

SAMPLE PAPER OF 1ST TERM (2015-16)

STD. XII

TIME :3:00HRS.

F.M.- 70

1. What represents the life span of an organism? (1)
2. What is funiculus? (1)
3. Name any two vestigial organs found in human body? (1)
4. Who experimentally prove that DNA replication is semi conservative. (1)
5. Give an example of vaccine produced by recombinant DNA technology? (1)
6. Define 'oestrus' and 'menstrual' cycles. (2)
7. State the characteristics of insect pollinated flowers. (2)
8. What is peptide bond? How is it formed? (2)
9. Why has natural selection not eliminated sickle – cell anaemia? (2)
10. Differentiate between convergent & divergent evolution? (2)
11. Describe the three manners in which fertilization of human ovum by sperm can be prevented? (3)
12. "Incompatibility is the natural barrier in fusion of gamete". Justify this statement. (3)
13. Describe the hormonal control of human male reproduction system with the help of a flow chart & highlight the inhibitory & stimulatory directions in it? (3)
14. How sex is determined in human beings? (3)
15. What is transformation? Describe Griffith's experiment to show transformation? What did he prove from his experiment? (3)
16. Two claimant fathers filed a case against a lady claiming to be the father of her only daughter. How could this case be settled identifying the real biological father? (3)
17. Describe the continuous & discontinuous Synthesis of DNA? (3)
18. Define bacterial transformation? Who proved it experimentally & how? (3)
19. By taking industrial melanism as an example, explain the concept of natural selection by evolution? (3)
20. Describe the procedure involved in Sewage treatment? (3)
21. What is apiculture? What are the requirements to consider for bee-keeping? (3)
22. How do Biofertilisers enrich the fertility of soil? How does cyanobacteria acts as biofertiliser? (3)
23. A person in your colony has recently been diagnosed with AIDS. People/residents in the colony want him to leave the colony for the fear of spread of AIDS. (4)
 - i) Write your view on the situation, giving reasons.
 - ii) List the possible preventive measures that you would suggest to the residents of your locality in a meeting organized by you so that they understand the situation.
 - iii) Write the symptoms and the causative agent of AIDS.
24. Explain the formation of an embryo sac with diagrams. (5)
25. Who performed the blender experiment? What does this experiment prove? Describe the steps followed in this experiment? (5)
26. What do you mean by "Out – breeding". What are the different methods employed for out breeding. (5)

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BIOLOGY (SET II)

SAMPLE PAPER OF 1ST TERM (2015-16)

STD. XII

TIME :3:00HRS.

F.M.: 70

1. What is the WHO's interpretation of reproductive health? (1)
2. Define parturition. (1)
3. Which period is called "Age of Reptiles". (1)
4. Name the common ancestor of apes & man? (1)
5. Name two better yielding varieties of rice developed in India? (1)
6. Differentiate between chasmogamous and cleistogamous flowers (2)
7. Why pollen grains can remain well preserved as fossils? (2)
8. What are multiple alleles? Give an example? (2)
9. Give two reasons why both the strands of DNA are not copied during DNA transcription? (2)

10. Why is human Genome project considered as mega project? (2)
11. Differentiate between microsporogenesis and megasporogenesis. (3)
12. Enlist any three causes of infertility in men and women. (3)
13. Differentiate between natality rate and mortality rate. (3)
14. How did Louis Pasteur successfully demolish the popular theory of spontaneous generation? (3)
15. Trace the important events or stages of human development? (3)
16. What is Biogenetic law? How does comparative embryology provide evidences for evolution? (3)
17. The length of DNA in an eukaryotic cell is 2.2 m . How can such a huge DNA be packaged in a nucleus of micrometer in diameter. (3)
18. A man with AB blood group marries a woman with O group blood. (3)
 - (i) Work out all the possible phenotypes & genotypes of the progeny.
 - (ii) Discuss the kind of domination in parents & progeny in this case?
19. Who were the two scientists that conducted an experiment to synthesise organic molecule abiotically? How did they provide the probable condition of the primitive earth in this experiment? (3)
20. What measures would you undertake to improve the quality & quantity of milk production? (3)
21. What are the major steps involved in Plant breeding? (3)
22. Microbes can be used to decrease the use of chemical fertilizers & pesticides. Explain how can this be accomplished? (3)
23. Saurabh went to watch a movie with his friends. In it, the hero was a sperm donor. One of his friends- Raman said that sperm donation is a means to only earn money. But Rahul contradicted him saying that sperm donation can help infertile couples. Answer the following questions based on the above information. (4)
 - i) Which of them is right?
 - ii) In which type of infertility cases is sperm donation helpful?
 - iii) What values are being depicted in the movie?
24. Describe the post-fertilization changes taking place in a flowering plant? (5)
25. What does Hardy Weinberg's principle state? What are the factors which affect Hardy Weinberg's equilibrium? (5)
26. What is somatic hybridization – Explain the steps involved in the production of somatic hybrids? (5)

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BIOLOGY (SET III)
SAMPLE PAPER OF 1ST TERM (2015-16)
STD. XII

TIME :3:00HRS.

F.M.- 70

1. Which individuals can be termed as clones? (1)
2. What kind of structures is formed at the end of microsporogenesis and megasporogenesis? (1)
3. What is the function of amino acyl tRNA synthetase. (1)
4. What is the base pairing pattern of DNA? (1)
5. What is a somaclones? (1)
6. How are the cells arranged in an embryo sac? (2)
7. Enlist any two functions of a female placenta. (2)
8. Why is it essential that tRNA binds to both amino acids & mRNA codon during protein synthesis? (2)
9. Mention any four important characteristics of genetic code. (2)
10. Define homologous organs? Give one example of organ homologous to hand of man? (2)
11. Why is syngamy a major event in sexual reproduction? (3)
12. Explain the structure of an anatropous ovule with a neat labeled diagram? (3)
13. Give any three advantages of sexual incompatibility. (3)
14. In *Antirrhinum majus* a plant with red flowers was crossed with a plant with white flowers. Work out all the possible genotypes & phenotypes of F₁ & F₂ generations comment on the pattern of inheritance in this case? (3)
15. In a cross made between a hybrid tall & red plant (TtRr) with dwarf & white flower (ttrr). What will be the genotype of plants in F₁ generation? (3)

16. A smooth seeded & red – flowered pea plant (SsRr) is crossed with smooth seeded & white flowered pea plant (Ssrr). Determine the phenotypic & genotypic ratio in f_1 progeny? (3)
17. A tRNA is charged with amino acid methionine.
 i) At what site in the ribosome will the tRNA bind?
 ii) Give the anticodon of this tRNA?
 iii) What is the mRNA codon for methionine?
 iv) Name the enzyme responsible for this binding? (3)
18. Chemical insecticides remain useful only for a limited time. Explain with reference to evolution with a suitable example. (3)
19. What are the facts that support Darwin's theory of Natural selection? (3)
20. How does humoral immune system works when our body is infected? (3)
21. What are carcinogens? What are the different types of carcinogens? Also mention the different methods of treatment of cancer? (3)
22. What is "tissue culture". What are the steps involved in tissue culture? (3)
23. Pankaj studies in this town but his family lives in remote village. In vacation when he visited his home, he found out that his father has arranged the marriage of his 13 years old sister. Pankaj objected to the marriage and convinced him against it.
 Answer the following questions based on the above information: (4)
 i) What values are shown by Pankaj?
 ii) What consideration made Pankaj object the marriage?
 iii) What steps have been taken by the government to stop child marriages?
24. Trace the events that would take place in flower from the time of Pollen grain of species fall on stigma up to completion of fertilization. (5)
25. What does Oparin – haldane hypothesis about origin of life suggests? (5)
26. Discuss the role of lymphoid organs in the immune response. Explain the different types of lymphoid organs giving two examples of each type in humans. (5)

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BIOLOGY (SET IV)
SAMPLE PAPER OF 1ST TERM (2015-16)
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TIME :3:00HRS.

F.M.: 70

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1. Define parthenocarpy. (1)
2. State the function of a vegetative propagule. (1)
3. Name one trait each in humans & in drosophila whose genes are located on sex chromosome. (1)
4. What is a test cross? (1)
5. Why does an AIDS patient suffer from many infections? (1)
6. Enlist the significance of reproduction. (2)
7. Differentiate between Geitonogamy & Allogamy. (2)
8. Which law of Mendel is universally accepted? State the law? (2)
9. How is the child affected if it has grown from the zygote formed by an XX-egg fertilized by Y-carrying sperm? What do you call this abnormality? (2)
10. Explain what happens in frameshift mutation? Name one disease caused by the disorder? (2)
11. What are heterogametes? What do we call these gametes individually? (3)
12. What is triple fusion? Where does it occur? (3)
13. Enlist the advantages offered by seeds to angiosperms. (3)
14. A red eyed male fruitfly is crossed with white eyed female fruitfly. Work out the possible genotype & phenotype of F_1 & F_2 generation. Comment on the pattern of inheritance in this cross? (3)
15. What are the facts that support Darwin's theory of Natural selection? (3)
16. The base sequence on one strand of DNA is ATGTCTATA (3)
 i) Give the base sequence of its complementary strand.
 ii) If an RNA strand is transcribed from this strand what would be the base sequence of RNA?
 iii) What holds these base pairs together?
17. What are the three different ways in which selection may occur. (3)

18. State in what ways Stanley miller stimulated the condition of :-
 i) Primitive atmosphere on earth.
 ii) Energy source at the time of origin of life .
 iii) Formation of organic molecule of life. (3)
19. What is Biogeography? How Darwin's finches provide biogeographical evidence in favour of evolution.(3)
20. What is Biogas? How is it produced & Name the microbes invaded in Biogas production. (3)
21. What are the measures that need to be taken for effective poultry farm management? (3)
22. What is vaccination? What type of immunity is provided by vaccination? (3)
23. Rohit meets with an accident,. Iqbal his schoolmate takes him to hospital where Rohit(AB blood group) needs blood transfusion. Iqbal also has AB blood group and is willing to donate his blood but Rohit's mother object by saying "Iqbal belongs to different community so has different type of blood".
 Answer the following questions based on the above information: (4)
 i) Do you think Rohit's mother is correct? Explain.
 ii) What values are being expressed by Rohit's mother?
24. Explain the development of embryo in a dicoty-ledonous plant with neatly labeled diagrams. (5)
25. Where do transcription & translation takes place in a prokaryotic cell?
 Describe the three steps involved in translation? (5)
26. With the help of a well – labelled diagram, Describe the life cycle of malarial parasite. (5)

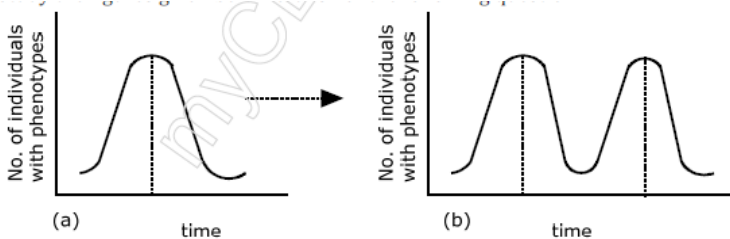
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BIOLOGY (SET V)
SAMPLE PAPER OF 1ST TERM (2015-16)
STD. XII

TIME :3:00HRS.

F.M.: 70

1. How will you grow a banana and a ginger plant? (1)
2. What is microsporogenesis? (1)
3. What is a test cross? (1)
4. What is mutagen? Give an example? (1)
5. Give the scientific name of causative germ of elephantiasis? (1)
6. Why are cleistogamous flowers invariably autogamous? (2)
7. Describe the structure of a sperm with a diagram. (2)
8. Give any two similarities between behavior of genes (Mendel's factor) during inheritance & chromosomes during cell division. (2)
9. The map distance in certain organism between genes A & B is 4 units, between B & C is units, & between C & D is 8 units which one of these gene paves will show more recombination frequency? Give reason. (2)
10. Three codons on mRNA are not recognised by tRNA what are they? What is the general term used for them what is their significance in protein synthesis? (2)
11. What happens during embryogenesis? (3)
12. Explain the stages involved in the maturation of a microspore into a pollen grain. (3)
13. What are the various male accessory glands? Give their function. (3)
14. Study the figures given below & answer the following question. (3)



- i) Under the influence of which type of natural selection would graph (a) become like graph (b).
 ii) What could be the likely reason of new variations arising in a population.
 iii) Who suggested natural selection as mechanism of evolution? (3)
15. It is established that RNA is the first genetic material. Explain giving three reasons. (3)
16. List the salient features of double helix structure of DNA. (3)
17. i) Name the enzyme that catalyses the transcription of hnRNA

- ii) Why does the hnRNA needs to undergo changes? List the changes hnRNA undergoes and where in the cell such changes take place. (3)
18. Describe the initiation process of transcription in bacteria. (3)
19. The length of a DNA molecule in a typical mammalian cell is calculated to be approximately 2.2 metres. How is the packaging of this long molecule done to accommodate it within the nucleus of the cell? (3)
20. It was diagnosed by a specialist that the immune System of the body of a patient has been suppressed. Describe the infection & the mechanism of its proliferation in the body. (3)
21. Describe the ill – effects of drug abuse in males & females. Also mention the preventive measures that is to be taken to reduce such effects. (3)
22. The steps in a programme are :-
Collection of germplasm, crossbreeding the selected parents, selection superior recombinant progeny & Testing, releasing & marketing new cultivars? (3)
- i) What is this programme related to?
- ii) Name two special qualities as the basis of selection of progeny.
- iii) What was the outcome of the programme?
- iv) What is the popular term given to this outcome? Also name the India Scientist who is credited with chalking out of this programme.
- v) Among the above – mentioned step which is the most crucial step of this programme & why?
23. Mohit had severe pain in his last molar tooth. Doctor advised the tooth to be removed. Mohit’s sister objected saying that this was ‘wisdom tooth’ and is responsible for his IQ. Mohit followed doctor’s advice and got his tooth extracted.
Answer the following questions based on the above information (4)
- i) Do you think Mohit will fail in his final examinations.
- ii) What values are shown by Mohit?
24. i) Why is zygotes dominant for sometime in fertilized ovule. (5)
- ii) What is polyembryony? Give an example.
- iii) In fruits, what is formed from following parts :-
- a) Ovary wall b) Outer integument
- c) Inner integument d) zygote
- e) primary endosperm f) Ovary g) Nucellus
25. What do you mean semi conservative nature of DNA replication. Who proved it & how? (5)
26. Explain the structure of immunity with well lable diagram and describe its function. (5)

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BIOLOGY (SET VI)
SAMPLE PAPER OF 1ST TERM (2015-16)
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TIME :3:00HRS.

F.M.: 70

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1. Name the part of an angiosperm flower in which development of male & female gametophyte takes place. (1)
2. Expand MTP and ICSI. (1)
3. Name the phenomena that occur when homologous chromosomes do not separate during meiosis. (1)
4. Name any one plant & its feature that shows the phenomena of incomplete dominance? (1)
5. Name the cells of immune system that are affected by HIV. (1)
6. What relationship exists between a species of moth and Yucca plant? (2)
7. Describe the structure of a microsporangium with a neatly labeled diagram. (2)
8. How will you find out whether a given plant is homozygous or heterozygous? (2)
9. Why do sons of haemophilic father never suffer from this trait? (2)
10. What is pedigree Analysis? How is it useful? (2)
11. Explain the menstrual cycle with a diagram. (3)
12. Differentiate between natality rate and mortality rate. (3)
13. How dose pollination takes place in salivaria. List any four adaptations required for such type of pollination. (3)
14. What is hnRNA? Explain the changes hnRNA undergoes during its processing to form mRNA. (3)
15. Why does DNA replication occur in small replication fork and not in its entire length? (3)

- i) Why is DNA replication continuous and discontinuous in a replication fork?
 ii) Explain the importance of 'origin of replication' in a replication fork.
16. Describe the elongation process of transcription in bacteria. (3)
17. Why is DNA considered a better hereditary material than RNA? (3)
18. Answer the following questions based on Meselson and Stahl's experiment. (3)
- i) Write the name of the chemical substance used as a source of nitrogen in the experiment by them.
 ii) Why did the scientists synthesise the light and the heavy DNA molecules in the organism used in the experiment?
 iii) How did the scientists make it possible to distinguish the heavy DNA molecule from the light DNA molecule? Explain.
 iv) Write the conclusion the scientists arrived at after completing the experiment.
19. Draw a schematic representation of a dinucleotide. Label the following - (3)
- i) The component of a nucleotide
 ii) 5' end
 iii) N-glycosidic linkage
 iv) Phosphodiester linkage
20. What are hallucinogens? Give their two examples. Mention their clinical use, if any. (3)
21. What is 'Blue revolution'? Name two fresh water and two marine edible fish. (3)
22. An antibody molecule is represented as H_2L_2 . Explain. (3)
23. A group of doctorate students were replicating Miller's experiment to study origin of life. Mistakenly, one of the students added sulphur dioxide (SO_2) to the reaction mixture. As a result, instead of amino acids and sugars they obtained some new compounds.
 Answer the following questions based on the above information: (4)
- i) Should the students note down the results obtained as such or manipulate them to obtain the expected results? What values will the students promote?
 ii) Should the students repeat the experiment in the same manner to get the same result or leave the experiment and start working on their original experiment?
 iii) What is the need of repeating the experiment?
24. What is menstruation? What are the specific actions of FSH, LH, estrogen & progesterone in menstrual cycle? (5)
25. What is an operon? Describe the major steps involved in an operon? (5)
26. What are the different barriers of innate immunity? How does skin act as a chemical barrier against pathogens? (5)

Or

Explain the different measures for control and prevention of drug/alcohol abuse among adolescents.

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BIOLOGY (SET VII)
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TIME :3:00HRS.

F.M.: 70

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1. At what stage is the mammalian embryo implanted in uterus? (1)
2. Why apple is called a false fruit. Which part of plant forms the fruit? (1)
3. What is meant by aneuploidy? (1)
4. Which one change is the cause of sickle – cell anaemia ? (1)
5. When is a tumour referred to as malignant? (1)
6. Why is process of fertilization in flowering plants referred to as double fertilization? (2)
7. How does Cu- T act as a contraceptive? (2)
8. Draw a neat labeled sketch of a replicating fork of DNA. (2)
9. How do histones acquire positive charge? (2)
10. Compare the roles of enzymes DNA polymerase and DNA ligase in the replication. (2)
11. Differentiate between spermatogenesis and oogenesis. (3)
12. Enlist the changes that occur post- fertilization in plants. (3)
13. State the consequences of over population. (3)
14. Describe the termination process of transcription in bacteria. (3)
15. What are Okazaki fragments? Explain briefly. (3)
16. What are the characteristics of DNA? (3)
17. What post-transcriptional changes occur in the primary transcript? (3)

18. Define bacterial transformation. Who demonstrated it experimentally and how? (3)
19. State the theory of biogenesis. How does Miller's experiment support this theory? (3)
20. Trace the events occurs in human body to cause immunodeficiency, when HIV gains entry into the body.(3)
21. Explain the life cycle of malaria parasite in human being. (3)
22. Write the source and the effect on the human body of the following drugs: (3)
 - i) Morphine
 - ii) Cocaine
 - iii) Marijuana
23. In Tarak's neighbourhood there is 5 year old boy who in is suffering from Down's syndrome. Other children in your locality do not interact with him. Answer the following questions based on the above information: (4)
 - i) Is it right not to interact with the boy?
 - ii) What is the cause of Down's s Syndrome?
 - iii) What value are exhibited by Tarak's neighbours?
24. Explain the development of human embryo with diagrams. (5)
25. State the aim and describe Meselson and Stahl's experiment. (5)
26. i) What is protoplast? (5)
 - ii) Name the two enzymes used in producing protoplasts.
 - iii) Describe the steps in producing somatic hybrids from protoplasts.
 - iv) Mention the usefulness of somatic hybridization.

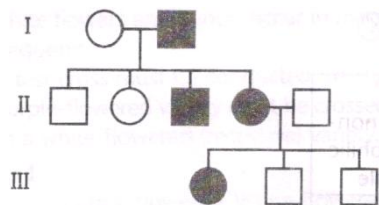
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BIOLOGY (SET VIII)
SAMPLE PAPER OF 1ST TERM (2015-16)
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TIME :3:00HRS.

F.M.: 70

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1. Why has the Government imposed a statutory ban on amniocentesis? (1)
 2. Where do we find fimbriae? (1)
 3. Name the process in which unwanted mRNA regions are removed & wanted regions are joined. (1)
 4. What is a codon? (1)
 5. What is Biofortification? (1)
 6. Which type of pollination ensures the arrival of genetically different pollen grains to stigma? (2)
 7. What are STDs? Mention any two of it. (2)
 8. i) Draw a neat labeled diagram of a nucleosome. (2)
 - ii) Mention what enables histones to acquire a positive charge.
 9. Retrovirus do not follow central dogma. Comment. (2)
 10. Write the full form of SNPs, BAC and YAC. (2)
 11. Explain any one natural method of birth control. (3)
 12. i) Explain the structure of a maize grain with the help of a diagram (3)
 - ii) Why cannot we use the term maize seeds for maize grains?
 13. List any three differences between wind pollinated flower & insect –pollinated flower. (3)
 14. The base sequence on one of the strands of DNA is ATGTCTATA. (3)
 - i) Give the base sequence of its complementary strand.
 - ii) If an RNA strand is transcribed by this strand, what would be the base sequence of RNA?
 - iii) In what other respect, an RNA molecule differs from a DNA molecule?
 15. a) A normal couple gave birth to one haemophilic son and two normal daughters. Work out the cross to show the genotypes of the parents and their progeny. (3)
 - b) Give the possible genotypes of the parents who can give birth to haemophilic daughters.
 16. a) Explain the phenomena of multiple allelism and codominance, taking ABO blood group as an example. (3)
 - b) What is the phenotype f the following? (i) $I^A i$ (ii) ii
 17. Differentiate between the following- (3)
 - i) Promoter and terminator in a transcription unit to.
 - ii) Exon and intron in an unprocessed eukaryotic mRNA.
 - iii) Inducer and Repressor in operons.
 18. When tall pea plants were self polinated, some of the offspring were dwarf. Explain with the help of a Punnett square. (3)
 19. Study the given pedigree chart and answer the questions that follows.



- a) Is the trait recessive or dominant?
 b) Is the trait sex-linked or auto-somal?
 c) Give the genotypes of the parents shown in generation I and their third child shown in generation II and the first grandchild shown in generation III. (3)
20. i) How and at what stage does Plasmodium enter into a human body?
 ii) With the help of a flow chart only, show the stages of asexual reproduction in the life cycle of the parasite in the infected human.
 iii) Why does the victim show symptoms of high fever? (3)
21. Name the type of immunity that is present at the time of birth in humans. Explain any two ways by which it is accomplished. (3)
22. A person is suffering from Ascariasis. Mention the pathogen causing the disease and an organ of the body affected, three symptoms and one mode of transmission of the disease. (3)
23. According to the human Genome Project, almost 99.9% nucleotide bases are exactly the same in all humans. Answer the following questions based on the above information:
 i) Do you think the discrimination of people on the basis of color, creed, caste, religion is correct? Why?
 ii) What percentage of the human genome codes for proteins?
 iii) Which chromosome has most genes on it? (4)
24. A woman has conceived & implantation has occurred within her uterus. Discuss the sequence of changes up to parturition which will take place within her body under the influence of various hormones. (5)
25. Tallness of pea plant is a dominant trait; dwarfness is the alternate recessive trait. A pure tall pea plant is crossed to a dwarf one. Work out the cross to show what fraction of the tall plants in F_2 generation is heterozygous? (5)
26. Describe in detail the process of MOET. (5)

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BIOLOGY (SET IX)
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TIME :3:00HRS.

F.M.: 70

1. Name the layer of cells that forms the outer wall of blastocyst (1)
2. Name the part of plant producing seed & fruit after fertilization. (1)
3. In which direction, the new strand of DNA synthesised during DNA replication. (1)
4. Name the three non-sense codons? (1)
5. Name the microbe that is grown for use as protein-rich food? (1)
6. Why do hilly areas of Kerela, Karnataka and Tamil Nadu transform into blue stretches that attracts many tourists? (2)
7. A human being suffering from Down's syndrome shows trisomy of 21st chromosome. Mention the cause of this chromosomal abnormality. (2)
8. A man with blood group A married a woman with B group. They have a son with AB blood group and a daughter with group O. Work out the cross and show the possibility of such inheritance. (2)
9. A plant of *Antirrhinum majus* with red flowers was crossed with another plant of the same species with white flowers. The plants of F_1 generations bore pink flowers. Explain the pattern of inheritance with the help of a cross. (2)
10. How does a test-cross help in identifying the genotype of the organism? Explain. (2)
11. Give three differences between tubectomy and vasectomy. (3)
12. Trace the development of microsporocyte into mature pollen grains. (3)
13. Trace the development of megasporocyte into mature ovule. (3)
14. Recently a girl baby has been reported to suffer from haemophilia. How is it possible? Explain with the help of a cross. (3)

15. In one family, each of the four children has a different blood group. Their mother is group A and the father is group B. Explain this pattern of inheritance with the help of a cross along with the genotypes. (3)
16. During his studies on genes in *Drosophila* that were sex-linked, T.H. Morgan found F₂ population phenotypic ratio deviated from the expected 9:3:3:1. Explain the conclusion, he arrived at. (3)
17. Explain the sex-determination mechanism in humans. How is it different in birds. (3)
18. Name a disorder, give the karyotype and write the symptoms which a human male suffers, as a result of an additional X-chromosome. (3)
19. How are dominance, codominance and incomplete dominance patterns of inheritance different from each other? (3)
20. a) Why do the symptoms of malaria not appear immediately after the entry of sporozoites into the human body, when bitten by female *Anophelis*? Explain.
b) Give the scientific name of the malarial parasite that causes malignant malaria in humans. (3)
21. How is innate immunity different from the immunity that you acquire through vaccination. Describe any two ways by which innate immunity can be accomplished. (3)
22. An antibody molecule is represented as H₂L₂. Explain. (3)
23. 'Like begets like' is a popular proverb. It means that offsprings resemble their parents. A married couple, both suffering from haemophilia, went to the doctor for consultation. They asked him if their child will also suffer from haemophilia like them. The doctor did some test and told them that their child, either a girl or a boy, will suffer from haemophilia.
Answer the following questions based on the above information: (4)
 - i) What values are promoted in the above situation?
 - ii) How did the doctor find out that the child will be haemophilic?
 - iii) Suppose the couple had a son who is haemophilic. What measures should the son undertake to ensure that his child is not haemophilic?
24. Explain the development of the zygote into an embryo and of the primary endosperm nucleus into an endosperm in a fertilized embryo sac of a dicot plant. (5)
25. How did Hershey and Chase proved that DNA is the hereditary material? Explain their experiment with suitable diagram. (5)
26. a) Name the genus to which baculoviruses belong. Describe their role in integrated pest management programmes.
b) Explain the different steps involved in sewage treatment before it can be released into natural water bodies. (5)

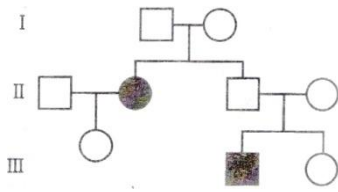
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BIOLOGY (SET X)
SAMPLE PAPER OF 1ST TERM (2015-16)
STD. XII

TIME :3:00HRS.

F.M.: 70

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1. Where does fertilization normally takes place in a human female. (1)
 2. How do the following organisms reproduce: *Paramecium* and *Penicillium*? (1)
 3. What was the total number of varieties of garden pea which Mendel had taken to start his experiment? (1)
 4. What is point mutation? (1)
 5. Name any two fresh water fishes? (1)
 6. What does GIFT represent? (2)
 7. Mention any four probable reasons for the rapid rise of population in our country? (2)
 8. The male fruit-fly and female fowl are heterogametic, while the female fruit fly and male fowl are homogametic. Why are they called so? (2)
 9. A woman with blood group O married a man with AB group. Show the possible blood groups of the progeny. List the alleles involved in this inheritance. (2)
 10. How does a test-cross help in identifying the genotype of the organism? Explain. (2)
 11. Briefly describe the stages of spermatogenesis in human? (3)
 12. Where oogenesis does takes place. Describe the stages of this process? (3)
 13. Suggest some methods to assist infertile couples to have children? (3)
 14. Study the pedigree chart given below showing the inheritance pattern of a human trait and answer the question that follow. (3)



- a) Give the genotype of the parents shown in generation 1 and of the son and daughter shown in generation II.
 b) Give the genotype of the daughter shown in generation III.
 c) Is the trait sex-linked or autosomal? Justify your answer.
15. Who proposed chromosomal theory of inheritance? Point out any two similarities in the behavior of chromosomes and genes. (3)
16. a) Sickle-celled anaemia in humans is a result of point mutation. Explain.
 b) Write the genotypes of both the parents who have produced a sickled-celled anaemic offspring. (3)
17. Name the genetic disorder caused by trisomy of 21st chromosome in humans. Write the diagnostic features of the disorder. (3)
18. Explain the mechanism of sex-determination in insects like *Drosophila* and grasshopper. (3)
19. Why are F₂ phenotypic and genotypic ratios same in a cross between red-flowered snapdragon and white-flowered snapdragon plants? Explain with the help of a cross. (3)
20. a) Why do farmers prefer bio fertilizers to chemical fertilizers these days? Explain.
 b) How do Anabaena and Mycorrhiza act as biofertilizers? (3)
21. Identify a, b, c, d, e and f in the table given below. (3)

S.No.	Organism	Bioactive molecule	Use
1	<i>Monascus purpureus</i>	a	b
2	c	d	Antibiotic
3	e	Cyclosporine A	f

22. Mention the product and its use produced by each of the microbes listed below. (3)
- Streptococcus*
 - Lactobacillus*
 - Saccharomyces Cerevisiae*
23. While coming home from school Goli and his friends see huge garbage dumps outside their school which are not being regularly disposed of by MCD. Goli discusses the problems with his friends and other classmates and decide to organize rally to spread awareness among local people about public hygiene.
- Prepare two slogans for rally
 - Name any two infectious diseases which may spread due to such unhygienic conditions at public place.
 - What values are exhibited by Goli and his friends? (4)
24. Draw a labelled diagram of the sectional view of a mature pollen grain in angiosperms. Explain the functions of its different parts. (5)
25. Describe Fredrick Griffith's experiment on *Streptococcus pneumoniae*. Discuss the conclusion he arrived at. (5)
26. a) Name any four micronutrients that are very essential for human health. Mention three consequences of their deficiency in the food.
 b) State the use of the following enzymes/acids produced by the microbes.
 i) Lipase ii) Lactic acid iii) Streptokinase iv) Pectinase (5)