

AFS

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**AIR FORCE SR SEC SCHOOL, RACE COURSE, N.DELHI**  
**1<sup>ST</sup> TERM EXAMINATION, YEAR 2017-18**  
**BIOLOGY - CLASS XII<sup>th</sup>**

Max. Marks - 70

TIME - 3hrs

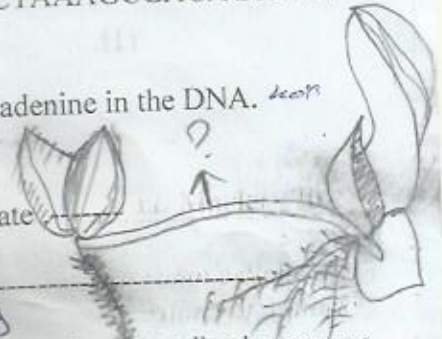
**General Instructions :**

- (i) This question paper consists of four sections A, B, C and D. Section A contains 8 questions of 1 mark each. Section B is of 10 questions of 2 marks each. Section C is of 9 questions of 3 marks each and section D is of 3 questions of 5 marks each. Total of 30 questions in all. All questions are compulsory. There are no overall choices.
- (ii) Questions in Section A are to be answered in one word or one sentence each.
- (iii) Questions in Section B are to be answered in approximately 20-30 words each.
- (iv) Questions in Section C are to be answered in approximately 30-50 words each.
- (v) Questions in Section D are to be answered in approximately 80-120 words each.

**SECTION - A**

1 marks

- Q1) All papaya plants bear fruits, but fruits are only seen in some. Why?
- Q2) Write the function of i) Corpus Leuteum. ii) Endometrium
- Q3) If the sequence of one coding strand of DNA is written as follows: 5'-AGCTAAAGCGACAGTTT-3'
- Q4) Write down the sequence of transcribed RNA strand.
- Q5) state the difference between a gene and a allele
- Q6) If a doublestranded DNA has 20% of cytosine, calculate the percentage of adenine in the DNA.
- Q7) How does the transmission of Ascariasis and Malaria takes place?
- Q8) State Hardy -Weinberg's principle.
- Q8) identify the picture and mention the vegetative part that helps it to propagate

**SECTION - B**

2 marks

- Q9) Fed up of a large family, a couple wanted to adopt a terminal method of contraception. Describe the process conducted by the doctor in either of the cases (male / female partner).

OR

Name the cell from which the endosperm of coconut develops. Give the characteristic feature of endosperm of coconut

OR

- Q10) How does Cu-T act as an effective contraceptive for human females?
- Q11) Mention two strategies evolved by flowers to prevent self-pollination.
- Q12) Why most zygotes in angiosperms divide only after certain amount of endosperm is formed?
- Q13) Draw a structure of nucleosome.
- Q14) what was the composition of the primitive atmosphere that favored abiotic origin of life on earth?
- Q14) In the medium where E. coil was growing, lactose was added, which induced the lac operon. Then why does lac operon shut down some time after addition of lactose in the medium?
- Q15) Give reasons for -
  - (i) Both strands of DNA are not copied during transcription.
  - (ii) Transcription and translation in bacteria can be coupled.
- Q16) Differentiate between Repetitive DNA and Satellite DNA.
- Q17) Are parthenocarpy and apomixes different phenomenon? Discuss their benefits.
- Q18) Draw a sectional view of a pollen grain.

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SECTION - C 3 marks

- Q19) Trace the development of a mature ovule from a megaspore mother cell.
- Q20) Represent the change of base (Point mutation) that causes sickle cell anemia. Represent diagrammatically the Hb<sup>A</sup> & Hb<sup>S</sup> polypeptides
- Q21) **Mohan father smokes cigarettes sitting in the main hall, while watching TV. But Mohan insists that he smokes outside the house in the lawn and also slowly gives up smoking as it is harmful for health.**
- a) Do you agree with Mohan that his father must smoke outside his house? Give reason for your answer.
  - b) Why does Mohan insist his father should give up smoking? What values do you identify from the role played by Mohan?
  - c) How can we make a propaganda and create awareness among people that smoking is injurious to health?
- Q22) Explain antibiotic resistance observed in bacteria in light of Darwinian selection theory.
- Q23) A tRNA is charged with amino acid methionine
- (i) Name the process involved in the attachment
  - (ii) Point out the mRNA codon and anticodon on tRNA for this amino acid.
  - (iii) What is heterochromatin?
- Q24) Draw labeled a sectional view of seminiferous tubule  
Or  
Draw a labeled sectional view of ovary.
- Q25) "Migration may enhance or blur the effects of selection" Comment.
- Q26) Draw a life cycle of Malarial Parasite?
- Q27) Define aneuploidy. How is it different from polyploidy? Name the disorder and one symptom of the individuals suffering from --a] the trisomy --b] monosomy of chromosome.

SECTION - D 5 marks

- Q28) A woman has conceived and implantation has occurred in her uterus. Explain the sequence of changes upto parturition which takes place within her body.
- OR
- Q29) What do you mean by development of Embryo in plants? Support the answer with diagrams
- a) A dihybrid test cross Between homozygous tall Pisum sativum plant bearing round seeds and a dwarf plant with wrinkled seeds was carried through two generations.
- i) Write the genotype and phenotype of the F<sub>1</sub> progeny obtained from this cross.
  - ii) Give the different types of gametes of the F<sub>1</sub> progeny.
  - iii) Write the phenotypes and its ratio 's' of the f<sub>2</sub> generation obtained in this cross along with the explanation provided by Mendel.
- b) How were the observations of f<sub>2</sub> progeny different from the observations obtained by Morgan in f<sub>2</sub> progeny carried out in Drosophila? Explain giving reasons.
- Q30) Stanley Miller performed an experiment by recreating in the lab the probable conditions of the atmosphere of the primitive earth.
- (i) What was the purpose of the experiment?
  - (ii) In what form was the energy supplied for the chemical reaction to occur?
  - (iii) What is biogenesis?
  - (iv) Give a diagrammatic representation of Miller's experiment.

OR

Who performed 'Blender' experiment with respect to DNA? What was the objective of this experiment? Explain the procedure in detail