6. In uniparental inheritance, all progeny have the phenotype of only..... Parent. (Two, none, both, one).
7. The electron transport chain drives cellular ..... production by oxidative phosphorylation. (Water, proton, ATP, electron).
8. In majority of birds, the sex is determined by ..... method.(ZW, XO, XY, XX)

Q III. (B) Explain the following terms (any two). (4)

1. Dioecious organisms.
2. Sex chromosomes.
3. Barr bodies.
4. Intersex.

Q III. (C) Answer in brief (any two). (12)

1. How does sexual differentiation in dioecious organisms take place? Explain with a suitable example.
2. Explain: chromosomal mechanism of sex determination: XX-XY method.
3. Discuss: non-Mendelian inheritance in mutant of yeast.
4. Give a brief note on structure, functions and replication of extranuclear DNA in mitochondria.

Q IV. Write a note on (any Three) of the following. (15)

1. Mitochondrial DNA defects.
2. Environmental control of sex determination in *Crepidula*.
3. 5' capping and 3' poly(A) tail of mRNA.
4. Termination of Translation.
5. Pedigree analysis and its importance in genetic counselling.
6. *Neurospora crassa* sexual life cycle.

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