Bajaj College of Science, Wardha

Practice Sheet During Lockdown

B.Sc. Semester IV

Subject: Zoology

Unit1

Long Questions

1. Elucidate Law of Segregation Cross with Example.
2. Explain Law of Independent Assortment with help of appropriate example and Punnett Square.
3. Explain Episatasis.
4. What is Dominant Epistasis, Explain it with appropriate example.
5. What is Recessive Epistasis, Explain it with appropriate example.
6. What is Linkage. Explain its types.
7. Explain Inheritance of Kappa particles in Paramecium.
8. Explain Genome of Mitochondria.

Short Questions

1. What are difference between Cytoplasmic Inheritance and Nuclear Inheritance
2. Significance of Crossing Over.
3. Back Cross.
4. Test Cross.
5. Recessive.
6. Pachytene stage.

Unit 2

Long Questions

1. What is Aneuploidy. Explain its types with example.
2. What is Turner syndrome.
3. What is Klinefeltersyndrome .
4. What is Down syndrome.
5. Explain Inversion and its types.
6. What is translocation.Add note on Chronic Myeloid Leukemia (CML)
7. What is translocation. Add note on Burkitt'sLymphoma.
8. Explain Spontaneous and induced mutations.
9. What are mutagenic Agents. Through Ligh in Chemical Mutagenic Agent.
10. What are transposable elements.

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Short Questions

1. What is Frame shift Mutation'
2. Point mutation.
3. Missense Mutation
4. Nonsense mutation.
5. Explain Deletion with appropriate example.
6. Explain Duplication with appropriate example.
7. Base analogs as mutagenic agents.
8. Intercalating agents as Mutagenic Agents.
9. Ionizing radiations.

Unit 3

Long Questions

1. What is Amniocentesis, Explain its procedure and applications.
2. What is Ames test, explain its applications.
3. Explain five assumptions for hardy weinberg equilibrium.

Short Questions

1. Define Population.
2. Define allele frequency.
3. Genetic Drift
4. Immigration in Hardy Weinberg Equilibrium.
5. p+q=1
6. Alpha fetoprotein.

Unit 4

Long Questions

1. Explain the experiments that prove DNA is the genetic material.
2. Explain the experiment of Griffith in details.
3. Explain in details, the structure and composition of DNA.
4. What is RNA? Explain the types and functions of RNA.
5. Explain in details the fine structure of gene

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Short Questions

1. Which bases are purines?
2. What are Pyrimidines?
3. In a DNA double helix, why doesn't an A or T form two hydrogen bonds (out of the three possible) with G or C?
4. What are the four pairs of DNA bases that form in the double helix?
5. What microorganisms are used in experiment of Griffith?
6. What is cistron?
7. What is recon?
8. What is soluble RNA?
9. What do you understand by major groove and minor groove?
10. In which organism RNA act as genetic material?

Unit 5

Long Questions

1. Explin Meselson-Stahl experiment in details.
2. Explain the roles of different enzymes involved in replication of prokaryotes.
3. Explain the process of Replication in Prokaryotes.
4. What is Transcription? Explain Transcription in prokaryotes.
5. What is Genetic code? What are the properties of Genetic code.
6. Explain Nirenberg and Matthaei experiment in details.

Short Questions

1. What is Wobble Hypothesis?
2. What do you understand by degeneracy of genetic code?
3. What are codons? What are start and stop codons?
4. What proteins are required for termination of transcription in prokaryotes?
5. What are Okazaki fragments?
6. Which is the leading strand and what is lagging strand?
7. Which strand is the coding strand and which strand is the template strand?
8. What are the roles of Helicase?
9. What is the function of SSB protein?
10. Write the function of DNA Polymerase I ?
11. Which proteins are required for the initiation of transcription in prokaryotes?
12. What is sigma factor?
13. What do you understand by clamp loader?
14. What are Ter sequences?
15. What is the role of RNA polymerase?

Unit 6

Long Questions

1. Explain process of Translation in Prokaryotes. Draw a well labelled Diagram.
2. What is Charging of t- RNA. What enzyme are involved in it.
3. Explain regulation of Prokaryotic gene.
4. Explain positive and negative regulation of lac operon.
5. what is attenuation in trp operon.

Short Questions

1. What is 70s initiation complex.
2. What is 30S initiation complex.
3. P site.
4. aminoacyl-tRNAsynthetase.
5. Allolactose.
6. Attenuation.
7. Leader Sequence in trp Operon.
8. EF-Tu.

For any queries, feel free to contact us on E-mail/ Whats App No.:

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