

## GE-4 (CELL & MOLECULAR BIOLOGY)

### 1. Answer the following questions in 2-3 sentences [1.5marks]

- Q1. What is a cell ? who coined the term cell.
- Q2. Distinguish between prokaryotic and eukaryotic cells?
- Q3. What do you mean by symport?
- Q4. What is active transport ?
- Q5. State types of ER along with their site of origin?
- Q6. Why Golgi apparatus is known as “packaging unit of cell” ?
- Q7. What is energy currency of cell ?
- Q8. Why mitochondria is termed as power house of cell?
- Q9. What is nuclear pore ?
- Q10. What do you mean by nuclear envelope ?
- Q11. What is karyokinesis?
- Q12. State stages of cell cycle ?
- Q13. Mention salient features of DNA double helix?
- Q14. State central dogma ?
- Q15. What is DNA polymerase ? state it's types .
- Q16. What are Okazaki fragments ?
- Q17. What is a RNA primer?
- Q18. What do you mean by leading and lagging strand ?
- Q19. What do you mean by wobble hypothesis ?
- Q20. What do you mean by codons ? state short codons .

### 2. Answer the following questions in 75-100 words [ 2 ]

- Q1. State the general characteristics of prokaryotic cells ?
- Q2. State the general characteristics of eukaryotic cells?
- Q3. Describe different components of plasma membrane ?
- Q4. Explain the structure of mitochondria ?
- Q5. Why lysosomes are called as suicidal bag of the cell?
- Q6. Why meiosis is termed as reductional division?
- Q7. What do you mean by pitch of DNA ?

- Q8. Explain structure of RNA ?
- Q9. Define tRNA ?
- Q10. What is DNA helix ?
- Q11. Define topoisomerases?
- Q12. What do you mean by sense and antisense strands ?
- Q13. What do you mean by transcription bubble ?
- Q14. Explain the structure of DNA ?
- Q15. What do you mean by transcript?
- Q16. What is RNA polymerase?
- Q17. What do you mean by transcription and translation ?
- Q18. What do you mean by RNA processing ?
- Q19. What are promoter sequences?
- Q20. Explain clover leaf model of tRNA ?

**3. Answer the following questions within 500 words [ 6 ]**

- Q1. Describe about various models of plasma membrane ?
- Q2. Elaborate structural organization of eukaryotic cell?
- Q3. Explain structure and function of mitochondria ?
- Q4. Discuss the ultra structure of nucleus ?
- Q5. Discuss the various stages of mitosis ?
- Q6. Discuss the various stages of meiosis ?
- Q7. What is a cell cycle ? mention it's stages ?
- Q8. Explain Watson and Crick model of DNA ?
- Q9. Discuss DNA replication in prokaryotes ?
- Q10. Discuss DNA replication in eukaryotes ?
- Q11. State the mechanism of transcription in prokaryotes ?
- Q12. State the mechanism of transcription in Eukaryotes ?
- Q13. Describe various methods of RNA processing?
- Q14. Describe translation in prokaryotes?
- Q15. What do you mean by splicing ? Describe it's different mechanism.