4. Draw well labelled diagrams of the following (any three):

(a) Ultrastructure of chloroplast

(b) Attenuation of Tryptophan operon

(c) Nuclear Pore Complex

(d) Primosome (5×3=15)

5. (a) Give a detailed account of cell cycle and its regulation in eukaryotes. (7)

(b) Discuss the role of Endoplasmic reticulum in processing and folding of proteins. (8)

6. (a) Give a detailed account of the roles played by Lysosomes and Peroxisomes. (7)

(b) Elaborate on the various steps of transcription in prokaryotes. How is the transcription process different in Eukaryotes? (8)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1524

Unique Paper Code : 42167902

Name of the Paper : Cell and Molecular Biology

Name of the Course : **B.Sc. (P) Life Sciences**

Semester : V

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. **All Questions** carry equal marks.
3. **Question No. 1** is compulsory.
4. Attempt five questions in all including **Question No. 1.**

1. (a) Expand (any five)

(i) ORF

(ii) cAMP

(iii) hn RNA

(iv) SER

(v) RF

(vi) snRNP (1×5=5)

(b) Give one contribution of (any five)

(i) Arthur Kornberg

(ii) Watson

(iii) O. T. Avery

(iv) Har Gobind Khorana

(v) R. Okazaki

(vi) Hershey and Chase (1×5=5)

(c) Define (any five):

(i) Transcription Factor

(ii) Corepressor

(iii) Initiation factors

(iv) Pribnow Box

(v) Operon

(vi) Chiasma (1×5=5)

2. Differentiate between (any five):

(i) Light microscopy and Electron microscopy

(ii) rRNA and tRNA

(iii) Positive and negative regulation of Lac operon

(iv) Primary and secondary cell wall

(v) Centromere and Telomere

(vi) Active transport and Facilitated diffusion

(vii) Prokaryotic cell and Eukaryotic Cell

(3×5=15)

3. Write short notes on (any three):

(i) X-ray diffraction

(ii) Telomerase and its significance

(iii) DNA packaging in eukaryotes

(iv) Endosymbiont Hypothesis

(v) Translation in Prokaryotes

(vi) Endomembrane system (3×5=15)

P.T.O.