4/12/18
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[This question paper contains 4 printed pages]

Your Roll No. : .....

Sl. No. of Q. Paper : **343** **I**

Unique Paper Code : 42167902

Name of the Course : **B.Sc.(Prog.) Life Sciences DSE-1A**

Name of the Paper : Cell and Molecular Biology

Semester : V

Time : 3 Hours ***Maximum Marks : 75***

Instructions for Candidates :

(a) Write your Roll No. on the top immediately on receipt of this question paper.

(b) Attempt any **five** questions in all. Question **NO.1** is compulsory.

(c) All questions carry equal marks. Answer all parts of a question together.

1. (a) Define the following (any **ten**) : 10

(i) Central dogma

(ii) Genetic code

P.T.O.

(iii) Aquaporin

(iv) Transcription

(v) Nucleotide

(vi) Okazaki fragments

(vii) Intron

(viii) Diplotene

(ix) Idiogram

(x) Ribozymes

(xi) Refractive index

(xii) Inducible operon

(b) Expand the following terms (any **five**) : 5

(i) ORF

(ii) NPC

(iii) PCR

(iv) FISH

(v) STEM

(vi) ATP

2. Write short notes on (Any **three** with suitable diagram) : 5 × 3 = 15

(i) Nucleosome

(ii) Function of Golgi complex

(iii) t – RNA

(iv) Synaptonemal complex

(v) Karyotype

3. Differentiate the following (any **five**). Draw the diagram wherever is required : 3 × 5= 15

(i) Mitosis and meiosis

(ii) Heterochromatin and euchromatin

(iii) Mitochondrial DNA and chloroplast DNA

(iv) Prokaryote and Eukaryote

(v) TEM and SEM

(vi) Primary and secondary cell wall

(vii) Leading and lagging strand

4. (a) Discuss transcription in Prokaryotes. 8

(b) Discuss the membrane proteins and their functions. 7

5. (a) Explain the structure of lysosome, its function and disease associated with it. 7

(b) Briefly discuss gene expression in Eukaryotes. 8

6. (a) Explain the Transformation experiment with diagram. 8

(b) Draw the structure of Lampbrush Chromosome. 3

(c) Draw the structure of Mitochondria and mention its function. 4

7. (a) Describe the Operon Model with the help of diagrams. 5

(b) What are the differences between light and electron microscopy ? 5

(c) Differentiate between active and passive transport. 5