



## Third Semester Examination-2018

M.Sc. BOTANY

Paper Code: BOT-301



~~2018-19~~  
3rd Sem.  
2017-18

Full Marks : 40

Time: 2 Hours

### Write the answer for each unit in separate Sheet

#### Unit -I

(CELL BIOLOGY & GENETICS)

**1. Answer any two of following:**

2×2=4

- a) What are the basic component of Primary and Secondary Cell wale?
- b) What is FISH?
- c) Mention function of Helicase and SSBP?
- d) What is Cdk? Mention its utility.

**2. Answer any two of following:**

2×4=8

- a) Illustrate the external influce of cell division.
- b) What is the role of sry and sox 9 gene in sex determination in man.
- c) Differentiate Heterochromatin and Euchromatin giving example of each.
- d) What are the unction's of different DNA Polymerases?

**3. Answer any one of following:**

1×8=8

- a) Mention the chemical composition of necleophsdiscuss its ultrustmeture. Describe the biogenesis of nucleolus cycle. 1+4+3=8
- b)i) Draw and discuss detailed structure of telomere. 4+ (3+1) = 8
- ii) Discuss Hardy-Weinbing hypothesis. What is inbreeding depression?

(Turn Over)



## Unit – II

(BIOTECHNOLOGY)

**4. Answer any two of following:**

2×2=4

- a) What are ligase and topoisomerase?
- b) Compare cDNA library with genomic library.
- c) What is heterosis and hybrid vigorous?
- d) Explain the term ECoRI?

**5. Answer any two of following:**

2×4=8

- a) Illustrate the steps for making recombinant DNA.
- b) Mention different types of packaging vectors with brief description of each type.
- c) Write down the applications of recombinant DNA technology in agriculture.
- d) Discuss the steps of mention its applications for RT-PCR.

**6. Answer any one of following:**

1×8=8

4+2+2=8

- a) i) Write down the process for regulation of gene expression in eukaryotes.
- ii) What is YAC?
- iii) Discuss the amplification protocol of DNA for PCR.

2+2+2+2=8

**b) Write short notes on**

- i) Totipotency
- ii) Micropropagation
- iii) Protoplast Culture
- iv) Organogenesis

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