Registration No:

Total Number of Pages : 1　　　　　　　　　　　　　　　　　　　　　　　　　　B.TECH

4ᵗʰ Semester Regular Examination-April-May 2019
BBTPC4010 – MOLECULAR BIOLOGY
(Regulations 2017) Biotech Branch

Time : 3 Hours　　　　　　　　　　　　　　　　　　　　　Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1.　Answer _All_ Questions.

a.	Define Cistron.	**[CO1] [PO1]**
b.	Significance of selfish DNA.	**[CO1] [PO1]**
c.	Name the enzymes associated in DNA replication.	**[CO2] [PO1]**
d.	Mention the DNA repair methods.	**[CO2] [PO1]**
e.	Mention the transcription factors.	**[CO3] [PO1]**
f.	Name the machineries associated in transcription process.	**[CO3] [PO1]**
g.	What do you mean by rDNA?	**[CO4] [PO1]**
h.	Nonsense genetic code.	**[CO4] [PO1]**
i.	Define central dogma.	**[CO1] [PO1]**
j.	Lac operon	**[CO4] [PO1]**

PART – B: (Short Answer Questions) 10X2=20 Marks

Q.2.　Answer _ALL_ questions

a.	C-value paradox	**[CO1] [PO1]**
b.	Mitochondrial genome	**[CO1] [PO1]**
c.	Post transcriptional processing	**[CO2] [PO1]**
d.	m-RNA editing	**[CO2] [PO1]**
e.	Holliday junction	**[CO3] [PO1]**
f.	DNA methylation	**[CO3] [PO1]**
g.	Restriction Enzymes	**[CO4] [PO1]**
h.	Pseudo genes	**[CO1] [PO1]**
i.	m-RNA stability	**[CO3] [PO1]**
j.	t-RNA	**[CO4] [PO1]**

PART – C: (Long Answer Questions) 15x4=60 Marks

Q.3

a.	Define genome. Differentiate between nuclear and organelle genome.	[6]	**[CO1][PO1]**
b.	What do you mean by genome complexity? Explain by suitable examples.	[9]	**[CO1][PO1]**

OR

c.	DNA is the genetic material. Justify with experimental evidences.	[7]	**[CO1][PO1]**
d.	Write about the different variant of genes and add a note on their significance.	[8]	**[CO1][PO1]**

Q.4

a.	Discuss about the DNA replication in detail.	[5]	**[CO2][PO1]**
b.	Write about the significance of different enzymes of DNA replication.	[10]	**[CO2][PO1]**

OR

c.	What do you mean by DNA recombination? Discuss in detail.	[7]	**[CO2][PO1]**
d.	Write in detail the DNA repair mechanism.	[8]	**[CO2][PO1]**

Q.5

a.	Write in detail about the transcription in prokaryotes.	[7]	**[CO3][PO1]**
b.	What do you mean by m-RNA processing? Discuss about the pre- translational processing.	[8]	**[CO3][PO1]**

OR

c.	Write in detail about the transcription in Eukaryotes.	[7]	**[CO3][PO1]**
d.	Discuss about the m-RNA editing in detail.	[8]	**[CO3][PO1]**

Q.6

a.	Discuss the discovery of genetic code and add a note about the properties of genetic code.	[9]	**[CO4][PO1]**
b.	Write the applications of recombinant DNA technology.	[6]	**[CO4][PO1]**

OR

c.	What do you mean by translation? Discuss the process in detail.	[6]	**[CO4 [PO1]**
d.	Write an essay on regulation of gene expression.	[9]	**[CO4 [PO1]**