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Sarsuna College
Intermediate Semester Examination-2020
Semester 4
MCBG

Full Marks - 50 **Time – 2 hours**

(Answer all questions)

SECTION-A: THEORY

1.	How do DNA and RNA differ in structure?	3
2.	State some important features of DNA double helix.	3
3.	Differentiate between spontaneous and induced mutations.	2
4.	How do the mutagens 5-bromouracil and UV radiations induce mutations?	2
5.	What is a point mutation? Give example.	2
6.	What is a frameshift mutation? Give example.	2
7.	What is photoreactivation?	2
8.	What is an episome?	1
9.	Write short notes on F plasmids.	2
10.	What are transposons? Give example.	2
11.	Differentiate between composite and non-composite transposons.	2
12.	What is Hfr?	1
13.	Give an example of a bacterium undergoing natural transformation.	1

SECTION-B: PRACTICAL

1.	What is the importance of agarose gel electrophoresis?	2
2.	How is the gel oriented here?	1
3.	Wells are created on which side of the gel? Why?	2
4.	How is the distance of migration related to the size of the DNA fragment?	2
5.	What is a DNA ladder?	2
6.	What is the role of ethidium bromide in this experiment?	2
7.	Expand the term TAE.	1
8.	What is the percentage of agarose generally used in this experiment?	1
9.	Give one precautionary measure used during the experiment.	1
10.	What is the thickness of the gel usually maintained in this experiment?	1

SECTION-C: INTERNAL ASSESSMENT

1. Damage and errors in DNA cause_____
a) Mutation
b) DNA repair
c) Translation

d) Transcription 2

2. Addition or deletion of bases causes which kind of mutation?
a) Transversion
b) Frameshift mutation
c) Transition
d) Transcription 2

3. The host bacterium takes up a plasmid in presence of _____
a) Monovalent cations
b) Monovalent anions
c) Divalent cations
d) Divalent anions 2

4. What is the temperature at which bacteria can takes up the plasmid?
a) 42˚C
b) -42˚C
c) 40˚C
d) -40˚C 2

5. Transposons were first discovered in _____
a) Rice
b) Bacteria
c) Mice
d) Maize 2
