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Sardar Patel University

Bachelor of Science (Semester-3) Examination-2022

US03CBIT51- Fundamentals of Biotechnology

Date: 17th November 2022, Thursday

Time:10:00AM - 01:00 PM **Total Marks: 70**

Note : 1. Figures to the right indicates full marks of Question.

Q-1 Multiple Choice Question (Attempt All) **10**

1. The organism in which the DNA has been modified to change characteristic is known as
   a) Clone c) GMO
   b) Wild type d) Soma clone
2. Which of the color scheme is used to represent clinical/medical biotechnology
   a) Blue c) Gold
   b) Green d) Red
3. Which institute/organization promotes and encourages the biotechnology activities in the state of Gujarat
   a) DBT c) BTkisan
   b) GSBTM d) Bioincubators
4. Watson & Crick model of DNA structure represents the _____ type of DNA
   a) A type c) C type
   b) B type d) Z type
5. Who gave the concept that purine are always equal to the pyramidines in DNA
   a) Wobble c) Kornberg
   b) Chargaff d) H.S. Khuranna
6. In the nomenclature of PUC8, the C is_____
   a) California c) Corn
   b) Chandigarh d) Centre
7. Which type of natural plasmid has gene for producing colicin
   a) Ti plasmid c) Ri plasmid
   b) F plasmid d) Col plasmid
8. Which of the following is not the characteristic of plasmid
   a) Single stranded DNA c) Autonomously replicating
   b) Double stranded DNA d) Contains origin of replication
9. Laminar air flow hoods uses _____ type of Air filters
   a) HEPA c) Candle filters
   b) Wire filters d) Reverse osmosis
10. In agarose gel electrophoresis the mobility of molecule is dependent on (where E= charge and M= mass)
    a) E/M ratio c) E+M ratio
    b) E*M ratio d) E-M ratio

(P.T.O.)

Q-2		**Short Question (attempt any ten)**	**20**
	1.	Give the full names of the BIRAC and GSBTM	
	2.	Define GMO.	
	3.	What is bioincubator programme?	
	4.	What is wobble's hypothesis?	
	5.	Give the use of guanidium thiocynate.	
	6.	What is sn-RNA?	
	7.	Define extra chromosomal DNA.	
	8.	Give two characteristics of Ri plasmid.	
	9.	Define transformation.	
	10.	What is the use of U.V transilluminator?	
	11.	Give the principle for centrifugation	
	12.	What is Agarose?	
Q-3	A	Discuss the types of biotechnology based on color schemes and its application	**05**
	B	Write a short note on GSBTM and its objectives	**05**
		OR	
Q-3	A	Discuss BIRAC and BioNEST schemes/ organization	**05**
	B	Discuss bioincubators and its role in today's society	**05**
Q-4	A.	Discuss the detailed structure of DNA given by Watson & Crick	**06**
	B.	Write a short note m-RNA	**04**
		OR	
Q-4	A.	Give the principle and methodology for isolation of RNA	**06**
	B.	Write a short note on chargaff's rule.	**04**
Q-5	A.	Give the structure and basic properties of Ti and F plasmid.	**06**
	B.	Explain the concept of competency and transformation.	**04**
		OR	
Q-5	A.	Give the structure and properties of any one type of extrachromosomal DNA	**06**
	B.	Give the structure and properties of Col plasmid	**04**
Q-6	A.	Give an account on principle of centrifuge and discuss its types.	**06**
	B.	Write a note on U.V. transilluminator.	**04**
		OR	
Q-6	A.	Discuss the methodology and role of reagents for isolation of plant genomic DNA	**06**
	B.	Write a short note on the instrument - incubator	**04**

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