B.Sc. Sem-6 Microbiology

: નોંધ : 27 OCT 2020 Sub. Code 21848

૧. દરેક પ્રશ્નનો [a] અથવા [a(i)] અને [a(ii)] જ લખવાના રહેશે.
૨. પ્રશ્ન : ૧[a] અથવા ૧[a(i)] અને ૧[a(ii)] તથા ૨[a] અથવા ૨[a(i)] અને ૨[a(ii)] ના 14 માર્કસ ના બદલે ૧૮ માર્કસ રહેશે.
૩. પ્રશ્ન : ૩[a] અથવા ૩[a(i)] અને ૩[a(ii)] તથા ૪[a] અથવા ૪[a(i)] અને ૪[a(ii)] ના 14 માર્કસ ના બદલે ૧૭ માર્કસ રહેશે.
૪. દરેક પ્રશ્નનો પ્રશ્ન નં ૧(b), પ્રશ્ન નં ૨(b), પ્રશ્ન નં ૩(b) તથા પ્રશ્ન નં ૪(b) (ટુંકા પ્રશ્નો) વિદ્યાર્થીએ લખવાના નથી.

Q.1(A)	Define Vector and explain shuttle and phage vectors in detail.	14
	OR	
Q.1(A) (i)	Describe: Site directed mutagenesis with advantages and disadvantages.	07
Q.1(A)(ii)	Explain: Polymerase chain reaction.	07
Q.1(B)	Short Questions (Attempt any FOUR) 1) What is the function of reverse transcriptase? 2) What is 'BR' in 'pBR322'? 3) Define: Genetic probes. 4) Which substrate is suitable for alkaline phosphatase activity? 5) Which is the most suitable host for Ti-plasmid? 6) List significance of restriction endonucleases.	04
Q.2(A)	How desired fragment of DNA is isolated from host and utilized for cDNA preparation?	14
	OR	
Q.2(A) (i)	Compare and Contract: Southern Blot and Western Blot techniques.	07
Q.2(A)(ii)	Write a note on Colony Hybridization.	07
Q.2(B)	Short Questions (Attempt any FOUR) 1) Define: Sticky ends. 2) What is pronuclear injection in microinjection technique? 3) List components used for electroporation technique. 4) What is marker gene? 5) Which character of protoplast makes it more superior to be used for fusion purpose? 6) Which sugar structure is analog to X-Gal?	04
Q.3(A)	Explain in detail: Steps involved in plant tissue culture technique.	14
	OR	
Q.3(A) (i)	Write a note on: Size exclusion chromatography.	07
Q.3(A)(ii)	Explain: Molecular Hybridization technique.	07
Q.3(B)	Short Questions (Attempt any THREE) 1) What is monolayer culture technique? 2) Define: Totipotency. 3) Name a fluorescent dye used to detect DNA in agarose gel. 4) Who defined the term 'Chromatography'? 5) List two disadvantages of DNA-microarray technique.	03
Q.4(A)	Discuss in detail: Various biofuels with their pros and cons.	14
	OR	
Q.4(A) (i)	Write short note on: Recombinant insulin production.	07
Q.4(A)(ii)	Explain: Significance of IPR.	07
Q.4(B)	Short Questions (Attempt any THREE) 1) Give names of bacteria used as biofertilizers. 2) Which enzymes are used for copper bioleaching? 3) Which organisms are used in Uranium bioleaching? 4) What is Bt cotton? 5) List any two analytical applications of enzymes.	03
