

P.S.Science and H.D.Patel Arts College Kadi

CLASS – B.Sc. SEMESTER – ^{VI}~~V~~ SUBJECT – BIOTECHNOLOGY

STE A

Core Compulsory PAPER: 602 Genetic Engineering

TIME : 1:45 to 3:45

Date 7/3/2018

MARKS : 40

Q – 1 ANSWERS THE FOLLOWING.

10 MARKS

- 1) A recombinant DNA molecule is produced by joining together
 - 1). one mRNA with a DNA segment
 - 2). one mRNA with a tRNA segment
 - 3). two mRNA molecules
 - 4). Two DNA segments
- 2) To be useful in the preparation of recombinant DNA, a plasmid must have
 - 1). No origin of replication
 - 2). An origin of replication
 - 3). The ability to alternate between the linear and circular forms
 - 4). Restriction endonuclease activity
- 3) Match the following:
 1. Restriction endonuclease p. Kary Mullis
 2. DNA Finger printing q. Kohler and Milstein
 3. Polymerase chain reaction r. Alec Jaffreys
 4. Monoclonal antibodies s. Arber
 - 1). 1-s, 2-r, 3-p, 4-q
 - 2). 1-s, 2-r, 3-q, 4-p
 - 3). 1-q, 2-r, 3-p, 4-s
 - 4). 1-s, 2-p, 3-q, 4-r
- 4) X-gal is a substrate for
 - 1) beta-galactosidase
 - 2) alpha-galactosidase
 - 3) Permease
 - 4) None
- 5) Restriction endonucleases have the ability of cutting
 - 1). DNA at random sites
 - 2) DNA at specific sites
 - 3) Both a and b
 - 4). DNA and RNA at random site
- 6) Fragments from 30 to 46 kb can be accommodated by a -----
 - 1) cosmid vector.
 - 2) Plasmid vector
 - 3) Lemda Phage
 - 4) None
- 7) Which group of enzymes are popularly called “Molecular stichers”
 - 1). restriction Endonuclease
 - 2). ligases
 - 3). RNA polymerase
 - 4). DNA polymerase
- 8) Restriction endonucleases cut DNA at a specific site called
 - 1). ligation site
 - 2). ori
 - 3). Recognition sequence
 - 4). Replication site
- 9) The presence of Restriction endonucleases were postulated in 1960 by
 - 1). Khorana
 - 2). Watson
 - 3). Crick
 - 4). Arber
- 10) Restriction endonucleases are also called
 1. molecular scissors
 2. molecular stichers
 3. DNA synthesis
 - d) polymerases

Q – 2 ANSWER THE FOLLOWING. (ANY four)

20 MARKS

- 1) Explain Pyro-sequencing
- 2) Write a note a YAC and BAC
- 3) Write a note on pBR 322 with its structure
- 4) Write a note on Northern Blotting with its application
- 5) Justify Transduction as natural recombination

Q – 3 ANSWER THE FOLLOWING. (ANY ONE)

10 MARKS

- 1) Write a note on Cosmid and Lemda phage as cloning vector
- 2) Write a note on PCR and its Application Medical biotechnology
- 3) Explain the Genomic DNA library and cDNA library