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UG/5th Sem/Zoo(H)/T/19

2019

B.Sc. (Honours)

5th Semester Examination

ZOOLOGY

Paper - DSE-2T

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

[Animal Biotechnology]

1. Answer any *five* questions of the following :

5×2=10

(a) What is VNTR ? Give example.

(b) What are the two advantages of bacterial artificial chromosome Vector ?

[Turn Over]

(2)

- (c) Will the sequence 5'-GGCC-3' and 3'-GGCC-5' in a double stranded DNA molecule be cut by the same restriction enzyme ?
- (d) What are the components used for Polymerase Chain Reaction (PCR) ? Why is Taq polymerase used in PCR technique ?
- (e) What do you mean by Hybridization Probe ?
- (f) What do you mean by Transgenic animal ?
- (g) State the difference between DNA fingerprinting and DNA footprinting.
- (h) What is meant by blue-white screening ?

2. Answer any *four* questions of the following :

4×5=20

- (a) Distinguish between Cosmid Vector and Shuttle Vector.
- (b) What do you mean by restriction mapping ? Give example.

(3)

- (c) What is Polymerase Switching and why is it necessary in eukaryotic replication fork ? 2+3
- (d) What is DNA microarray technique ? Enlist a major application of the procedure. 2+3
- (e) What is cDNA library ? Describe schematically the construction of cDNA library. 2+3
- (f) Briefly describe the procedure of inserting foreign DNA in *E.coli*. What is Padlock probe ?
3+2

3. Answer any *one* question of the following :

1×10=10

- (a) Write the Principle of Polymerase Chain Reaction (PCR). What is RT-PCR ? Write the advantages of RT-PCR over routine PCR. 4+2+4
- (b) (i) Describe briefly the DNA sequencing method of Sanger.
- (ii) Write note on Sickle cell anemia. 6+4

[Turn Over]

(4)

[Microbiology]

1. Answer any *five* questions of the following :

5×2=10

- (a) Name the causative agent of Anthrax. Who discovered it ?
- (b) Write names of bacteria which get stained by acid-fast staining method.
- (c) Name two bacteria which are present in your body.
- (d) What do you mean by broth culture ?
- (e) What is teichoic acid ?
- (f) Write short note on mesosome.
- (g) Write the purpose of streak culture.
- (h) What is metagenomics ?

(5)

2. Answer any *four* questions from the following :

4×5=20

- (a) Briefly mention about Whittaker's Kingdom Concept.
- (b) What is transfection ? Mention factors affecting competence generation during transformation process.
- (c) Differentiate between gram positive and gram negative bacteria with minimum five different characteristic features.
- (d) Write the characteristic features of Plasmid. Mention its application in biology.
- (e) Write down causative agent, symptoms and preventive measure of dengue.
- (f) Differentiate : (i) epidemic and endemic
(ii) Endotoxin and Exotoxin.

[Turn Over]

(6)

3. Answer any *one* question of the following :

1×10=10

(a) (i) Write about F^+ , F^- and Hfr. 6

(ii) What is transformation ? Write its application. 4

(b) Write down the name of causative agent, symptoms, pathogenesis, mode of action and preventive measure of Polio. 2×5=10
