

C 22043

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Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2017

(CUCSS)

Zoology

ZO 4C T11—MICROBIOLOGY AND BIOTECHNOLOGY

Time : Three Hours

Maximum : 36 Weightage

I. Write short notes on all the *fourteen* questions :

- 1 Transgenic crops.
- 2 Super bugs.
- 3 Biosensors.
- 4 Gene knockouts.
- 5 Antenatal diagnosis.
- 6 RFLP.
- 7 Real Time PCR.
- 8 FISH.
- 9 cDNA probes.
- 10 MAC.
- 11 Bioremediation.
- 12 Lactic acid fermentation.
- 13 Nucleoid.
- 14 Pure culture.

(14 × 1 = 14 weightage)

II. Answer any *seven* questions :

- 15 Write the major characteristics of the volumes of Bergey's manual of systematic bacteriology.
- 16 Describe the major nutritional types of microbes.
- 17 Give an account on bacterial motility and transport of nutrients.

Turn over

- 18 Explain the structural organization of a typical virus.
- 19 Give an account on the causative organisms, symptoms and treatment of AIDS and Rabies.
- 20 Give an account on biogas plants.
- 21 Explain the various hybridization methods for the selection of transformed cells *in vivo* cloning.
- 22 Give an account on the production and applications of molecular probes.
- 23 Explain the principle and methodology involved in Sanger's DNA sequencing technique.
- 24 Give a short account on ethical and social issues of Genetic Engineering.

(7 × 2 = 14 weightage)

III. Answer any *two* questions :

- 25 With suitable diagram describe the structural organization of bacteria. Add note on the chemical composition of bacterial cell wall.
- 26 Discuss the various aspects of microbial growth and various methods of measurement of cell numbers.
- 27 Describe the characteristics of an ideal vector used for cloning and explain the various types of vectors used in genetic engineering.
- 28 Explain the principle, methodology, types and applications of polymerase chain reaction.

(2 × 4 = 8 weightage)