D 70207 (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. (CUCBCSS—UG) DEGREE EXAMINATION NOVEMBER 2019

(CUCBCSS—UG)

Botany

BOT 5B 05—GYMNOSPERMS, PALAEOBOTANY, PHYTOGEOGRAPHY AND EVOLUTION

Time : Three Hours Maximum : 80 Marks

Part A

I. Answer *all* questions (1 mark each) :

1 What is transfusion tissue ?

2 Name the negatively geotropic root in *Cycas*.

3 What is *Lepidocarpon* ?

4 State 'Age and Area hypothesis' ?

5 What is an ovuliferous scale ?

6 Define endemism.

7 What is sympatric speciation ?

8 Define genetic drift.

9 What are dwarf shoots ?

10 What is glaciation ?

(10 × 1 = 10 marks)

Part B

II. Answer *all* questions. Short answer (2 marks each) :

11 Differentiate between protenoids and prions.

12 Write a note on Geological time scale.

13 Explain Neo-Darwinism.

14 Brief the contributions of an eminent Indian Paleobotanist.

15 Describe polyembryony in *Pinus*.

16 Explain the role of mutations in evolution.

Turn over

17 Discuss the role of Paleobotany in the exploration of fossil fuels.

18 Explain the theory of spontaneous generation.

19 Describe the male cone of *Cycas*.

20 Differentiate between continuous and discontinuous distribution.

(10 × 2 = 20 marks)

Part C

III. Answer any *six* questions. Short essays (5 marks each) :

21 Describe the Miller's experiment.

22 Explain the continental drift theory.

23 Describe the structure and adaptations of *Pinus* needle.

24 Brief a note on evolution of prokaryotic and eukaryotic cells.

25 What is speciation ? Add an account on various isolation mechanisms.

26 Explain the anatomy of rachis of Cycas.

27 What are the different types of fossils ?

28 Explain the concept of Lamarckism and Darwinism.

(6 × 5 = 30 marks)

Part D

IV. Answer any *two* questions. Essays (10 marks each) :

29 Explain the evolutionary trends in Gymnosperms. Add a note on its Pteridophyte and Angiosperm affinities.

30 Write a detailed account on phytogeographical zones of the world ?

31 Explain the various forces of evolution leading to genetic constancy and variability.

(2 × 10 = 20 marks)