Reg. No ..... Name **19P2034**

MSc DEGREE END SEMESTER EXAMINATION - MARCH/APRIL 2019

SEMESTER 2 : BOTANY

COURSE : **16P2BOTT07 : PLANT ANATOMY, PRINCIPLES OF ANGIOSPERM SYSTEMATICS & MORPHOLOGY**

(For Regular – 2018 Admission and Supplementary – 2017/2016 Admissions)

Time : Three Hours Max. Marks: 75

Section A

Answer any 8 (2 marks each)

1. How do you differentiate a salt gland from other secretory glands?
2. What is ring porous wood?
3. What do you mean by trilacunar node?
4. What are the functions of trichomes?
5. What do you understand by receptacular theory?
6. What are the different types of roots in epiphytes?
7. What are breathing roots? Give an example.
8. Explain histotaxonomy.
9. What are the major and minor categories in taxonomic hierarchies?
10. Explain briefly about author citation in plant nomenclature.
11. Write briefly on the role of cytological characters in Taxonomy.
12. Explain different types of compound leaves. Provide examples.

(2 x 8 = 16)

Section B

Answer any 7 (5 marks each)

13. Briefly explain the structure of various types of trichomes based on their morphology.
14. Explain the formation of reaction wood in plants.
15. Explain physical and chemical properties of wood.
16. What do you mean by included phloem? Explain with suitable example.
17. 'Anatomy can solve taxonomic problems' Discuss.
18. Explain systematics.
19. Write a brief history of ICBN.
20. Explain, with suitable examples, the role of phytochemistry in angiosperm systematics.
21. Explain special type of inflorescences. Draw labelled diagrams and provide examples for each.

22. Explain the functions of essential and non-essential parts of a typical angiosperm flower.

(5 x 7 = 35)

Section C
Answer any 2 (12 marks each)

23. With the help of suitable examples and diagrams, write an essay on internal secretary structures in plants.

OR

24. How do you distinguish dicot wood from gymnosperm wood based on anatomical features?

25. Write an essay on chemotaxonomy and DNA barcoding as modern tools in angiosperm systematics.

OR

26. Write an essay on various types of inflorescence in angiosperms. Give examples and necessary explanatory diagrams.

(12 x 2 = 24)

Reg. No ..... Name **19P2035**

MSc DEGREE END SEMESTER EXAMINATION - MARCH/APRIL 2019

SEMESTER 2 : ZOOLOGY

COURSE : **16P2ZOOT07 : DEVELOPMENTAL BIOLOGY**

(For Regular – 2018 Admission and Supplementary – 2017/2016 Admissions)

Time : Three Hours Max. Marks: 75

Section A
Answer any 8 (2 marks each)

1. Define fertilization.
2. Explain the term capacitation.
3. Elaborate the importance of implanataion.
4. Brief on the biochemical changes occurring in acrosome reaction.
5. Define justacrine factors
6. Explain Inductive cascade.
7. Briefly explain Mesoderm signaling.
8. What is meant by Bicoid gradient?
9. What is ecdysis?
10. Explain epimorphosis type regeneration.
11. Differentiate autophene and allophene.
12. Write on Transgenic stem cells.

(2 x 8 = 16)

Section B
Answer any 7 (5 marks each)

13. Write briefly on the structure of typical mammalian egg.
14. Explain the process of spermiogenesis.
15. Explain how species specificity is maintained in fertilization.
16. Comment on germ cell migration in mammals.
17. Discuss the role of egg cortex in development.
18. Explain with examples, the role of transcription factors in early development of vertebrates.
19. Explain the working of morphagen gradients in the development of a fly.
20. Discuss the role of P – granules in the development of *C. elegance*.

21. How imaginal discs important in insect metamorphosis?
22. Explain lens regeneration in Amphibia.

(5 x 7 = 35)

Section C
Answer any 2 (12 marks each)

23. How Spemann reached in the conclusion that an organizer is working in the early development of a vertebrate?
24. Hormonal control of metamorphosis in Amphibia
25. Define Infertility. Discuss the causes of infertility in Human beings.
26. What are stem cells? Explain applications of stem cell research. Comment on the ethical issues related to stem cell research.

(12 x 2 = 24)