D 91434

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

M.Sc. Applied Zoology

ZOO3E16—INSECT PHYSIOLOGY AND BIOCHEMISTRY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

I. Write essays on any *two* of the following. Each question carries 15 marks :

1 Explain the composition and biochemistry of insect cuticle.

2 Explain the structure of the respiratory system of insects. Add a note on the process of ventilation.

3 Describe the excretory system and physiology of excretion in insects.

4 Explain the structure of the alimentary canal in insects and its modifications.

(2 × 15 = 30 marks)

II. Write short essays on any *three* of the following. Each question carries 10 marks :

5 Write an account on the neurosecretory cells and endocrine glands in insects.

6 Briefly describe the process of nerve impulse transmission.

7 Write an account of the classification of chemical insecticides.

8 Explain the structure and functions of fat body in insects.

9 Give an account of specialized digestion in insects.

(3 × 10 = 30 marks)

III. Write short notes on any *five* of the following. Each question carries 4 marks :

10 Biosynthesis of trehalose.

11 Neuromuscular junction.

12 Chemoreceptors in insects.

13 Acetylcholinesterase inhibition.

14 Closed and open tracheal system.

15 Course of circulation of haemolymph.

16 Plastron respiration in insects.

17 Metabolic poison.

(5 × 4 = 20 marks)

D 91433

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

M.Sc. Applied Zoology

ZOO 3E 15—GENERAL ENTOMOLOGY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

I. Write essays on any *two* of the following :

1 Enumerate the structural and functional aspects of insect wing.

2 Classify the order Strepsiptera giving salient features and biology.

3 Write the structure of male and female external genitalia and reproductive organs in insects.

4 Explain the salient features and biology of the order Hemiptera.

(2 × 15 = 30 marks)

II. Write short essays on any *three* of the following :

5 Write the typical structure of an insect leg. Explain their functional modifications.

6 Classify the order Orthoptera giving salient features and biology.

7 Explain the general pattern of embryonic development in insects.

8 Classify the superfamily Chalcidoidea to families, enlisting diagnostic characters.

9 Write an account on the order Isoptera highlighting salient features and biology.

(3 × 10 = 30 marks)

III. Write short notes on any *five* of the following :

10 Siphoning type of mouthparts in butterflies.

11 Viviparity in insects.

12 Family Cerambycidae.

13 Order Embioptera.

14 Auditory tympanum.

15 Structural diversity of insect eggs.

16 Family Calliphoridae.

17 Superfamily Vespoidea.

(5 × 4 = 20 marks)

D 91432 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

M.Sc. Applied Zoology

ZOO 3C 14—MICROBIOLOGY AND IMMUNOLOGY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A (Microbiology)

I. Write an essay on any *one* of the following :

1 Enumerate the classification of viruses.

2 Explain the industrial applications of microbes.

(1 × 15 = 15 marks)

II. Write short essays on any *two* of the following:

3 Write on the importance of phylogenetic studies in microbial taxonomy.

4 Elaborate on gram staining.

5 Comment on genetically engineered microbes.

6 Explain bacterial diseases in human.

(2 × 8 = 16 marks)

III. Write short notes on any *three* of the following :

7 Phenetic classification.

8 Fungal diseases.

9 SCP.

10 Lysogenic cycle.

11 Pili and Fimbriae.

(3 × 3 = 9 marks)

Turn over

Part B (Immunology)

IV. Write an essay on any *one* of the following :

12 Explain the structure and functions of MHC molecules.

13 Write on different types of vaccination and their principles.

(1 × 15 = 15 marks)

V. Write short essays on any *two* of the following:

14 Elucidate antigen presentation pathways.

15 Comment on VD(J) rearrangements of Immunoglobulin gene.

16 Explain the properties and therapeutic applications of cytokines.

17 Elaborate on graft rejection.

(2 × 8 = 16 marks)

VI. Write short notes on any *three* of the following :

18 Monoclonal antibodies.

19 MAC.

20 ELISA.

21 Immunodeficiency diseases.

22 Antibody engineering.

(3 × 3 = 9 marks)

D 91431

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

M.Sc. Applied Zoology

ZOO 3C 13—DEVELOPMENT BIOLOGY AND ANIMAL ETHICS

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

I. Write an essay on any *two* of the following :

1 Elaborate on spermatogenesis and factors affecting it.

2 Explain morphogenetic movements.

3 Write on the characters, types and applications of stem cells.

4 Explain axis specification in amphibian development.

(2 × 15 = 30 marks)

II. Write short essays on any *three* of the following :

5 Comment on hormonal control on gametogenesis.

6 What do you know about embryonic induction ?

7 Write on genomic equivalence.

8 Enumerate the CPCSEA guidelines for experiments on animals.

9 Elaborate on vitellogenesis in insects.

(3 × 10 = 30 marks)

III. Write short notes on any *five* of the following :

10 Polyspermy.

11 Metabolic events in gastrulation.

12 Primary organizer.

13 Rights Theory.

14 Epimorphic regeneration.

15 Utilitarianism.

16 Homeotic genes.

17 Teratogenesis.

(5 × 4 = 20 marks)