D 11183

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Applied Zoology

ZOO 3E 16—INSECT PHYSIOLOGY AND BIOCHEMISTRY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

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

1 Write an essay on the digestive enzymes and the physiology of digestion in insects.

2 Explain the role of different hormones in insect metamorphosis.

3 Describe nerve impulse transmission and synaptic transmission in insects.

4 Explain the mechanism of detoxification in insects.

(2 × 15 = 30 marks)

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

5 Explain trehalose metabolism in insects.

6 Write a short essay on the structure and functions of haemocytes.

7 Give an account of the histomorphology of insect muscles.

8 Explain how ventilation is controlled in insects.

9 Explain the histology of insect integument.

(3 × 10 = 30 marks)

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

10 Photoreceptors in insects.

11 Physical gill and plastron respiration.

12 Sclerotization and melanisation of insect cuticle.

13 Extra intestinal digestion.

14 Control of heart beat in insects.

15 Role of fat body in storage reserves.

16 Inhibitors of chitin synthesis.

17 Glycerol phosphate shuttle.

(5 × 4 = 20 marks)

D 11181 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

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. The question carries 15 marks :

1 Explain the structure of bacterial cell wall. Comment on gram staining.

2 Elucidate the life cycle of virus.

(1 × 15 = 15 marks)

II. Write short essays on any *two* of the following. Each question carries 8 marks :

3 Comment on DNA viruses.

4 Write on the antibiotics derived from microorganisms.

5 Describe the control of microorganisms using chemical agents.

6 Elaborate on bacterial culture media.

(2 × 8 = 16 marks)

III. Write short notes on any *three* of the following. Each question carries 3 marks :

7 Bergey's manual

8 Fungal diseases.

9 Bio-mineralisation.

10 Phenetic classification.

11 Microbial growth curve.

(3 × 3 = 9 marks)

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THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

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 Explain different methods of locomotion in insects.

2 Enumerate the morphology of insect abdomen.

3 Classify apterygote insects to families giving diagnostic features and biology.

4 Mentioning diagnostic characters and biology classify the order Siphonaptera.

(2 × 15 = 30 marks)

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

5 Write the taxonomy and biology of the order Mecoptera.

6 Explain the causal factors of insect embryogenesis.

7 Enlist the salient features and biology of the order Ephemeroptera.

8 Mentioning the diagnostic features and biology classify the suborder Nematocera of the order Diptera.

9 Explain the morphology of insect head.

(3 × 10 = 30 marks)

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

10 Sponging type of mouthparts of house flies.

11 Polyembryoni.

12 Wing coupling mechanism.

13 Structure of insect male genitalia.

14 Order Phasmida.

15 Superfamily Cynipoidea.

16 Family Coccinellidae

17 Family Papilionidae.

(5 × 4 = 20 marks)

Part B (Immunology)

IV. Write an essay on any *one* of the following. The question carries 15 marks :

12 Describe autoimmune diseases.

13 Explain the structure and diversity of antibodies.

(1 × 15 = 15 marks)

V. Write short essays on any *two* of the following. Each question carries 8 marks :

14 Elucidate the classical pathway of Complement Activation.

15 Explain graft rejection.

16 Comment on antigen presentation pathways.

17 Write on VD(J) rearrangements.

(2 × 8 = 16 marks)

VI. Write short notes on any *three* of the following. Each question carries 3 marks :

18 MHC class-I.

19 Properties of cytokines.

20 DNA vaccines.

21 RIA.

22 Delayed Hypersensitivity.

(3 × 3 = 9 marks)

D 11180

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Applied Zoology

ZOO 3C 13—DEVELOPMENTAL BIOLOGY AND ANIMAL ETHICS

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

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

1 Narrate the physiological and biochemical events associated with fertilization.

2 Explain embryonic induction.

3 Write on the genetic basis of axis specification in *Drosophila*.

4 Comment on ageing and its regulatory factors.

(2 × 15 = 30 marks)

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

5 Write about vitellogensis in amphibia.

6 Describe different types of cleavage.

7 What do you know about ooplasmic determinants ?

8 Explain the various types of regeneration.

9 Elaborate onbioethics.

(3 × 10 = 30 marks)

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

10 Dedifferentiation.

11 Regulative development.

12 Nieuwkoopcentre.

13 Hormones in ageing.

14 GLP.

15 Xenobiotics.

16 Superovulation.

17 Hedgehog gene.

(5 × 4 = 20 marks)