

2019

(January)

Time : 2 hours

Full Marks : 40

Answer all questions from any one Group
as per your specialization

*The figures in the right-hand margin indicate marks
Candidates are required to answer in their own words
as far as practicable*

Draw neat labelled diagrams wherever necessary

GROUP – A

(ETHOLOGY AND DEVELOPMENT BIOLOGY)

1. Describe migration behaviour in fishes and birds. 14

Or

Write notes on any two of the following : 7 × 2

- (i) Neural mechanism of learning in vertebrates
- (ii) Reproduction behaviour in vertebrates

(Turn Over)

(2)

(iii) Social behaviour in insects and primates.

2. Describe morphogenic movements and mechanism of gastrulation. 13

Or

Write notes on any *two* of the following : $6\frac{1}{2} \times 2$

- (i) Molecular events during fertilization
- (ii) Totipotency and tissue culture in animals
- (iii) Differentiation and differential gene activity.

3. Describe the development of Heart in chick : $6\frac{1}{2} \times 2$

- (i) Placentation
- (ii) Oestrus and menstrual cycle
- (iii) Infertility and artificial insemination.

GROUP – B

(METABOLISM)

1. Write an account on Lipid metabolism. 14

Or

Write notes on any *two* of the following : 7×2

(3)

(i) Sulphur metabolism

(ii) Sulphur uptake

(iii) Assimilation of sulphur.

2. Describe Biochemical metabolism of Nitrogen fixation. 13

Or

Write notes on any *two* of the following : 13

- (i) Nitrogen cycle
- (ii) Nitrogen fixation in symbionts
- (iii) Describe ammonium transport and assimilation.

3. Describe the oxidation of fatty acids. 13

Or

Write notes on any *two* of the following : 13

- (i) Aerobic respiration
 - (ii) Cyanide resistant respiration
 - (iii) HMP pathway.
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