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5. (a) Describe various types of placenta on a histological basis. 10
(b) Add a note on the functions of placenta. 5
6. Write short notes on any **three** of the following :
5×3=15
- (i) Extraembryonic membranes in chick
 - (ii) Fate Maps
 - (iii) In vitro fertilization
 - (iv) Hormonal disrupters as 'teratogens
 - (v) Patterns of cleavage

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : 1937 I

Unique Paper Code : 2232012402

Name of the Paper : DSC : Development
Biology

Name of the Course : **B.Sc.(Hons.)**
Zoology, NEP, UGCF

Semester : IV

Time : 2 Hours **Maximum Marks : 60**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt any **four** questions in **all**. Question **NO.1** is compulsory.
- (c) Attempt **all** the parts of question together.
- (d) Draw-well labelled diagrams wherever necessary.

1. (a) Define (any **four**) : 1×4=4
- (i) Perivitelline space
 - (ii) Blastema
 - (iii) Cortical granules

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- (iv) Senescence
(v) Polar body
- (b) Differentiate between the following (any two) : $2 \times 2 = 4$
(i) Subgerminal and segmentation cavity
(ii) Preformation and Epigenesis
(iii) Oligolecithal and Polylecithal eggs
- (c) Name the germ layers from which each of the following is derived. $0.5 \times 6 = 3$
(i) Lens of Eye
(ii) Adrenal Medulla
(iii) Skin
(iv) Bone
(v) Notochord
(vi) Pituitary
- (d) Expand the following abbreviations: $0.5 \times 4 = 2$
(i) GVBD
(ii) IMZ
(iii) ESC
(iv) DES

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- (e) State the major contributions of the following scientists : $1 \times 2 = 2$
(i) W. Vogt
(ii) Hilde Mangold
2. (a) Explain in detail the growth of oocyte during oogenesis. 8
(b) Describe the role of acrosome reaction during fertilization in mammals. 7
3. (a) Define Metamorphosis. Briefly describe hormonal regulation of metamorphosis in insects. 8
(b) Explain the principle and procedure of Amniocentesis. Discuss its significance in the prenatal diagnosis. 7
4. (a) Describe various morphogenetic movements with reference to gastrulation in frog. 10
(b) Compare the blastopore of frog to primitive streak of chick. 5