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- (b) Describe different types of egg membranes. (6)
5. (a) Define amniocentesis. Discuss in details its procedure and applications. (5)
- (b) Describe different types of placentas based on morphological and histological characteristics. (10)
6. Write short notes on any **three** of the following : (5×3=15)
- (i) Spermeiogenesis
 - (ii) Patterns of Cleavage
 - (iii) Acrosomal reaction
 - (iv) Morphogenetic movements

(1200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 13544

K

Unique Paper Code : 2234000017

Name of the Paper : Generic Elective-17: Principles of Developmental Biology

Name of the Course : B.Sc. / B.Com. / B.A.

Semester : VII (NEP UGCF)

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Four** questions in all, including Question No. 1, which is compulsory.
3. Attempt **all** the parts of question together.
4. Draw neat labelled diagrams wherever necessary.

P.T.O.

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1. (a) Define the following (**Any four**) : (4)

- (i) Spermiation
- (ii) Hensen's node
- (iii) Blastocoel
- (iv) Polar body
- (v) Capacitation

(b) Differentiate between any **three** of the following : (6)

- (i) Epigenesis and Preformation
- (ii) Area opaca and Area pellucida
- (iii) Blastula and Blastocyst
- (iv) Mesolecithal and Megalecithal egg

(c) Name the germ layers from which each of the following is derived. (2)

- (i) Notochord
- (ii) Adrenal Medulla
- (iii) Kidney
- (iv) Trachea

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(f) State the major contributions of the following scientists (**Any three**) : (3)

- (i) J. F. Gudernatsch
- (ii) William McBride
- (iii) F. R. Lillie
- (iv) Aristotle

2. (a) Define gastrulation. With the help of well labelled diagrams describe the formation of gastrula in amphibians. (9)

(b) Explain the mechanism of hormonal control of amphibian metamorphosis. (6)

3. (a) Describe the process of oogenesis in mammals. (7)

(b) What is polyspermy? Describe the mechanism of fast block and slow block to polyspermy, respectively. (8)

4. (a) What are teratogens? Discuss the effects of chemical teratogens on human embryonic development. (9)

P.T.O.