Total No. of Questions : 6]

SEAT No. : ____

P723

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[5117]-202
S.Y. B.Sc.
BIOTECHNOLOGY
Bb - 222 : Plant & Animal Development
(2013 Pattern) (Semester - II)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written on separate answer sheets.***
3) ***Draw neat diagrams wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Plant Development

Q1) Answer in 2-3 sentences: **[5 × 2 = 10]**

a) Define tapetum.

b) What is campylotropous ovule?

c) Define redifferentiation.

d) What is double fertilization and triple fusion?

e) Define megasporogenesis.

Q2) Answer any four of the following: **[4 × 5 = 20]**

a) Explain programmed cell death as a developmental process in plants.

b) Enlist and explain types of endosperms in plants.

c) Write a note on SAM.

d) Describe role of in vitro organ culture with reference to plant development.

e) Elaborate on role of various genes involved in vegetative patterning.

f) Explain ABC model of floral patterning.

P.T.O.

Q3) Attempt any one: **[1 × 10 = 10]**

a) Give detailed account of use of Fucus as a model system to study plant development.

b) With the help of neat, labelled diagrams, explain development of monocotyledonous embryo.

SECTION - II

Animal Development

Q4) Answer the following: **[5 × 2 = 10]**

a) What is the role of dorsal lip of blastopore during amphibian embryo development?

b) Explain two theories of ageing.

c) Define the term holoblastic cleavage.

d) Write two characteristics of stem cells.

e) Define the term Differentiation.

Q5) Attempt the following (any 4): **[4 × 5 = 20]**

a) Describe the process of spermatogenesis.

b) Explain the Mechanism of slow block during fertilisation.

c) Describe the role of zygotic genes in pattern formation.

d) Write a note on cell lineage with any one of the suitable example.

e) What is teratogenesis? Explain the role of any one teratogen in abnormal development of an embryo.

f) What is apoptosis? Describe the role of Apoptosis in limb development.

Q6) Attempt any one of the following: **[1 × 10 = 10]**

a) Describe the process of gastrulation in frog and add a note on fate of 3 germinal layers.

b) Explain the concept of animal regeneration. Enlist the different patterns of regeneration and elaborate any one pattern of regeneration with an example.