UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2019

Roll No. in Fig. .....

Roll No. in Words. .....

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Signature of Supdt.:

Paper: Analysis of Development
Course Code: ZOOL-312 Part – I (Compulsory) **Time: 15 Min. Marks: 10**

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.
Division of marks is given in front of each question.
This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the correct option. **(10x1=10)**

I. Pigmented retinal cells move internally to .....
(a) Neural retinal cells (c) Heart cell
(b) Epidermal cells (d) Ectodermal cells

II. Liver develops from
(a) Endoderm (c) Ectoderm
(b) Mesoderm (d) none

III. Regeneration that occurs through re-patterning of existing tissues is known as
(a) Stem-cell mediated (c) Epimorphosis
(b) Morphallaxis (d) compensatory

IV. Ectoderm is responsible for the development of
(a) bone (c) kidney
(b) Skeletal muscle (d) Nervous system

V. Human genome may contain genes
(a) 2000-3000 (c) 20000-30000
(b) 200000-300000 (d) none

VI. There is at least _____ component/s to every inductive interaction.
(a) one (c) three
(b) two (d) four

VII. Cadherin-cadherin interaction is _____ times stronger than regular-proteins interaction.
(a) 100 (c) 200
(b) 400 (d) 300

VIII. Fragile X-syndrome is caused by
(a) FMR1 gene (c) eIF4E
(b) eIF4G (d) BDNF

IX. Vertebrate gastrulation is the example of
(a) Matrix secretion and degradation (c) cell migration
(b) dispersal (d) delamination

X. The mesoderm has positive affinity for
(a) Ectoderm (c) endoderm
(b) both ectoderm and endoderm (d) none

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B.S. 4 Years Program / Sixth Semester – 2019

Roll No. .....

Paper: Analysis of Development
Course Code: ZOOL-312 Part – II

Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Question No. 2: Shortly answer the following Questions. **(10×2=20)**

a) What is Bone morphogenetic Factor (BMP)?
b) Differentiate between instructive and permissive interactions.
c) Define cell potency with examples.
d) Define critical period for teratogens during Pregnancy.
e) Give names and functions of some cadherin molecules.
f) What are Primordial germ cells? From where these originate in mammalians Embryos.
g) Enlist some basic Genes involved in eye development.
h) What is the role of Nodal genes in axis specification?
i) What is secondary induction?
j) Define with example selective affinity.

Question No 3: Answer the following questions **(3×10=30)**

a) How different families of proteins are created by differential RNA Processing?
b) Write a detailed note on Gonad development in vertebrates.
c) Describe the Epimorphic Regeneration in Salamander's limb.