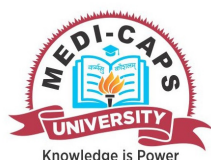


Total No. of Questions: 6

Total No. of Printed Pages:2



Enrollment No.....
Faculty of Science
End Sem Examination May-2024
BT3GE02 Developmental Biology

Programme: B.Sc.

Branch/Specialisation: Biotechnology

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. Polar bodies are formed during the formation of- **1**
(a) Oogonia (b) Spermatogonia
(c) Sperms (d) Ova
- ii. Vitellogenesis means _____. **1**
(a) Formation of vitelline membrane
(b) Formation of yolk sac
(c) Formation and storage of yolk
(d) All of these
- iii. The cleavage in centrolecithal egg is _____. **1**
(a) Holoblastic (b) Superficial
(c) Spiral (d) Discoidal
- iv. Archenteron is found in _____. **1**
(a) Blastula (b) Morula
(c) Neurula (d) Gastrula
- v. Which embryo layer forms nerve cells? **1**
(a) Endoderm (b) Ectoderm
(c) Mesoderm (d) All of these
- vi. The stabilization of various regions of the embryo is termed as _____. **1**
(a) Determination (b) Differentiation
(c) Proliferation (d) Maturation
- vii. The gut is developed from _____. **1**
(a) Endoderm (b) Ectoderm
(c) Mesoderm (d) All of these

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- viii. The primary organ rudiments develop in frog embryo during _____. **1**
(a) Neurulation (b) Gastrulation
(c) Blastulation (d) Cleavage
- ix. Which of the following is not caused by a teratogen? **1**
(a) Meromelia (b) Spina bifide
(c) Down's syndrome (d) Phacomelia
- x. Which of the following is the most essential nutrient for a woman during her initial stages of pregnancy to prevent birth defects? **1**
(a) Thiamin (b) Folic acid
(c) Vitamin C (d) Vitamin E
- Q.2 i. What is acrosome? State its function. **2**
ii. Give the classification of egg based on quantity of egg yolk. **3**
iii. Describe the process of oogenesis. **5**
OR iv. Describe the process of spermatogenesis. **5**
- Q.3 i. Give the significance of fate maps of embryo. **2**
ii. Explain in detail the mechanism of blastulation. **8**
OR iii. What is gastrulation? Discuss about various morphogenetic movements. **8**
- Q.4 i. Define cytoplasmic localization. **3**
ii. Elaborate on embryonic induction. **7**
OR iii. Give a detailed account on embryonic cell differentiation. **7**
- Q.5 i. Discuss the fate of primary germ layers. **4**
ii. Describe the process of vertebrate eye development. **6**
OR iii. Write a note on extra embryonic membranes. **6**
- Q.6 Attempt any two:
i. Write a note on factors affecting embryonic development. **5**
ii. Elaborate on any one teratogenic disorder. **5**
iii. Briefly describe the role of vitamins in embryonic development. **5**

Marking Scheme

Developmental Biology (T) - BT3GE02 (T)

Q.1	i)	Polar bodies are formed during the formation of	1
		d) Ova	
	ii)	Vitellogenesis means____.	1
		c) Formation and storage of yolk	
	iii)	The cleavage in centrolecithal egg is _____.	1
		b) Superficial	
	iv)	Archenteron is found in _____.	1
		d) Gastrula	
	v)	Which embryo layer forms nerve cells?	1
		b) Ectoderm	
	vi)	The stabilization of various regions of the embryo is termed as _____.	1
		a) Determination	
	vii)	The gut is developed from____.	1
		a) Endoderm	
	viii)	The primary organ rudiments develop in frog embryo during _____.	1
		a) Neurulation	
	ix)	Which of the following is not caused by a teratogen?	1
		c) Down's syndrome	
	x)	Which of the following is the most essential nutrient for a woman during her initial stages of pregnancy to prevent birth defects?	1
		b) Folic acid	
Q.2	i.	Acrosome – Definition & function.	2
	ii.	Classification of egg.	3
	iii.	Process of oogenesis.	5
	OR iv.	Process of spermatogenesis.	5

Q.3	i.	Fate maps of embryo significance.	2
	ii.	Blastulation – Definition & mechanism	8
OR	iii.	Gastrulation - Definition	2
		Morphogenetic movements – Definition and types.	6
Q.4	i.	Cytoplasmic localization - Definition	3
	ii.	Embryonic induction – Definition, importance, process and types	7
OR	iii.	Embryonic cell differentiation – Definition, significance and process.	7
Q.5	i.	Fate of primary germ layers.	4
	ii.	Process of vertebrate eye development.	6
OR	iii.	Extra embryonic membranes (Definition, types and functions)	6
Q.6			
	i.	Factors affecting embryonic development (Any four).	5
	ii.	Any one teratogenic disorder (Disorder name, cause, effect)	5
	iii.	Role of vitamins in embryonic development (Any four Vitamins & their effect)	5
