namer mass of cells

E OJ DAN CAL

## aller to a rear Tennic bett 3 (Sem-6/CBCS) ZOO HC 1

1137

131

## 2022

## ZOOLOGY

(Honours)

Paper: ZOO-HC-6016

(Developmental Biology)

Full Marks: 60

Time: Three hours

The figures in the margin indicate full marks for the questions.

- 1. Choose the correct answer of the following:

  (any seven) 1131000011300 (11) 1×7=7
- (a) Rolling of sheet of cells over other cells during gastrulation is called as:

Hensen's now

Octal lip o

ios. Primitive groove

- (i) Involution
- (ii) Ingression
- (iii) Epiboly
- (iv) Invagination

- (b) Embryonic stem cells are derived from
  - (i) Undifferentiated inner mass of cells of embryo
  - (ii) Differentiated inner mass of cells of embryo
  - (iii) Undifferentiated trophoblast cells

- (iv) Differentiated trophoblast cells
- (c) The only cell that can give rise to a complete new organism is
  - (i) Pluripotent
  - (ii) Multipotent
    - (iii) Totipotent
    - (iv) Corticopotent
- (d) In case of chick development, primary organizer is called
  - (i) Hensen's node
  - (ii) Dorsal lip of blastopore
  - (iii) Nieuwkoop centre
  - (iv) Primitive groove

The is	type of regeneration found in hydra		
(i)	Morphallaxis	11 days a	(1)
(ii)	Epimorphos	is 2755 12	(ċ)
(iii)	Regeneration	2-1 dars	(1.9)
(iv)	Healing	31 dats	(10)
In c	<del></del>		
	cell stage	Morrishasia	(3)
(i)	8 cell	Discollai	(i)
(ii)	16 cell	Supertinal	(111)
(iii)	32 cell	Holphiastic	fresh .
(iv)	Mass of cells	process 1. 2	(i) The
In fr	og, cleavage	is ei amoi er	layet
(i)	Holoblastic a	and equal	(7)
(ii)	Holoblastic a	and unequal	13
(iii)	Meroblastic	and unequa	1 (iii)
(iv)	Meroblastic	and discoida	al 133
	is (i) (ii) (iii) (iv) In (ii) (iii) (iv) (iii) (iii) (iii) (iii) (iii)	is  (i) Morphallaxis  (ii) Epimorphos  (iii) Regeneration  (iv) Healing  In developmenta  ———————————————————————————————————	(ii) Morphallaxis (iii) Epimorphosis (iii) Regeneration (iv) Healing In developmental biology, cell stage (i) 8 cell (ii) 16 cell (iii) 32 cell (iv) Mass of cells In frog, cleavage is (i) Holoblastic and equal (ii) Holoblastic and unequal (iii) Meroblastic and unequal

(h)	The incubation period in chick tastes for			
	abo	ut		ž i
	(i)	11 days	Visit the Next	(2)
	(ii)	21 days	Ep merphe	ř-;
	(iii)	24 days	Researche	(111)
	(iv)	31 days	House	0.23
(i)	The	type of cleave	age found in	insect is
	(i)	Meroblastic		
	(ii)	Discoidal	1.40 8	(3)
	(iii)	Superficial	16 cell	(m)
	(iv)	Holoblastic	32 011	$E_{ij}$
(j)	The	process in	which the th	nree germ
	laye	rs form is cal	lled with 30	(g) in fi
	(i)	Cleavage	Holotalast	(2)
	(ii)	Gastrulation	a rank folk	(38)
	(iii)	Organogene	sis sidereld	(111)
	(îv)	Metamorpho	Merobleaisc	(43)

2.	Write short notes on any four of the following:  2×4=8
	(a) Stable cell interaction
	(b) Homolecithal eggs
	(c) Disco blastula
	(d) Zonary placenta lo satisti una rewartA
	(e) Frozen embryo
	(f) Totipotent stem cells the serving
	(g) Meridional plane of cleavage
	(h) Primary egg membrane
	(n) What is cytoplasmic determinant?
3.	Answer any three of the following: 5×3=15
	(a) Describe briefly the differential gene expression.
	(b) Describe the process of spermatogenesis.
	(c) Describe different types of egg with example. qui doi: 10 managelevab
	(d) What are the fate of germ layers?
	(e) Types of placenta. Tem stal si tadW (v)

- (f) Describe the metamorphic changes found in amphibians.
- (g) Teratogenic agents.
- (h) Biological theories of Aging.
- 4. Answer any three of the following:

07711 no no. 10×3=30

count supple

1:34

(0)

(i) What is pattern formation? Describe the process of patterning along the anterior-posterior axis of Drosophila embryo.

entidarem see val.

2+8=10

(ii) What is cytoplasmic determinant?

Describe the process of asymmetric segregation of cellular determinants.

sates languaged in ode witched odfine 2+8=10

3 Sent of Col 9 John 801 C 5

- (iii) Describe the mechanism of fertilization with labelled diagram. 7+3=10
- (iv) Describe the process of early development of chick up to gastrulation.

Will are the fate of germ Liners ?

(v) What is fate map? Describe the fate map of a typical chordate blastula. 3+7=10

6

- (vi) Describe the process of implantation of human embryo.
- (vii) What is regeneration? Describe the morphallactic regeneration found in Hydra. 2+8=10
- (viii) What is IVF? Describe the technique used in IVF. 2+8=10