

Puspa Shrestha

Best Quality Resource Site for Class 11 And 12
Students (Based on Updated Curriculum 2077)



PDF Collections

Notes

Books

Model Questions

This PDF was downloaded
from **puspas.com.np**

Visit our website for more
materials.



puspas.com.np

Follow us on:



AR Dinesh



puspas.com.np



Puspa Shrestha

EXPERIMENT NO. 2

NAME OF EXPERIMENT: TO STUDY EMBRYOLOGICAL SLIDES OF FROG

Embryology is the study of different stages of development from zygote to adult form. It is also known as developmental biology.

a) Fertilized egg

1. The egg or ovum of frog is a special cell measuring about 1.5 mm diameter.
2. It is encircled by inner vitelline membrane and outer thick albumen membrane.
3. The upper half portion of egg is superficially pigmented with blackish brown colour and called animal pole or hemisphere. The animal pole contains a fertilized egg nucleus surrounded by cytoplasm.
4. The lower half portion of egg is occupied by white yolk and is called vegetal pole or hemisphere.
5. Between animal and vegetal poles, there is a gray crescent area which marks future dorsal side.

TO STUDY EMBRYOLOGICAL SLIDES OF FROG

Roll No. : 11

Date : 20/8-08-10

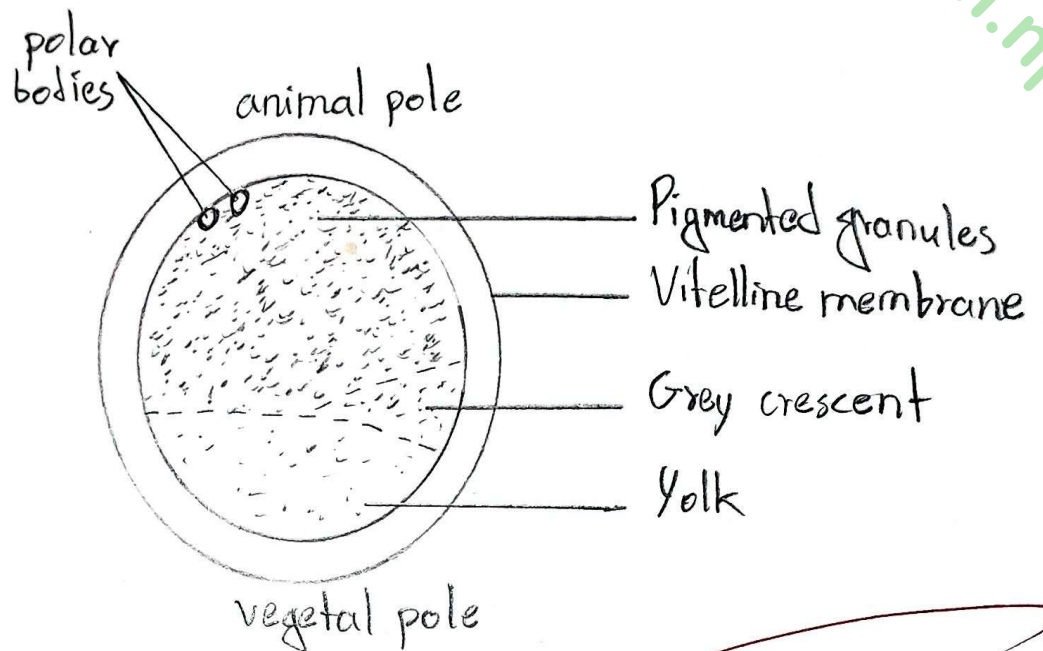


fig. Fertilized egg

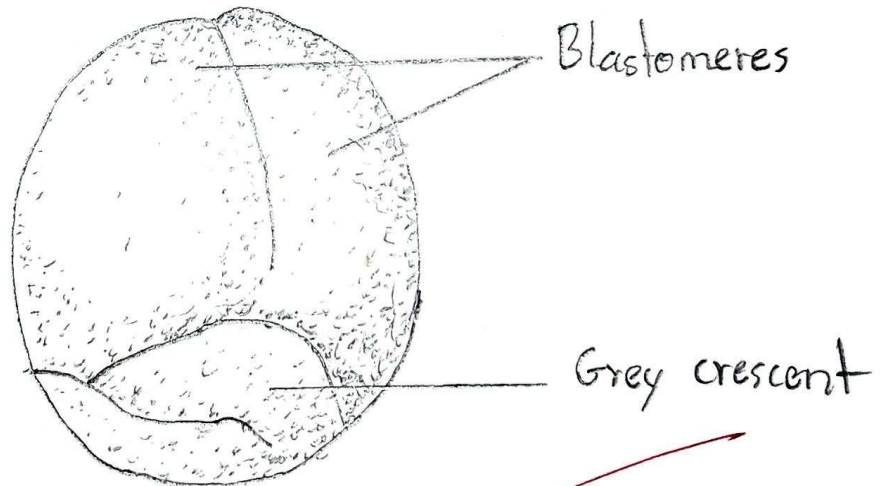


fig. Two-celled stage.

[Signature]
20/8/17

b) Two-celled stage

1. The division and redivision of zygote is called cleavage or segmentation.
2. It is the first stage in cleavage process.
3. Cleavage is holoblastic and complete.
4. The first division is vertical.
5. It begins as a small depression at the animal pole and gradually extends to the vegetal pole.
6. This furrow divides the egg completely into two equal cells called blastomeres.

c) Four-celled stage

1. It is also called second cleavage.
2. It is holoblastic, complete and equal.
3. The division is vertical but at right angle to the first.
4. Finally four cells or blastomeres are formed which are of equal size.

d) Eight-celled stage

1. It is also called third cleavage.
2. It is holoblastic but unequal.
3. After second division the third division is horizontal passing just above the equatorial plane.

4. The division results 8 unequal blastomeres.
5. All together there form 8 cells among them upper four cells are smaller known as micromeres and the lower four cells are larger called megameres or macromeres.
6. Megameres lie at the vegetal pole and micromeres at animal pole.

e) Morula stage

1. This step is taken place by two vertical divisions which result 16 cells. The 4th step is followed by two horizontal divisions forming 32 cells.
2. Continuous divisions occur resulting 128 cells or blastomeres.
3. The megameres are the yolk-laden cells which multiply slower.
4. Micromeres are small and devoid of yolk, therefore, these multiply rapidly.
5. So many cells are arranged in such a way that they make a structure like a fruit of mulberry. Hence it is called morula.

f) V.S. of Blastula

1. The fertilized egg undergoes many divisions

TO STUDY EMBRYOLOGICAL SLIDES OF FROG

Roll No. : 11
Date : 2018-08-10

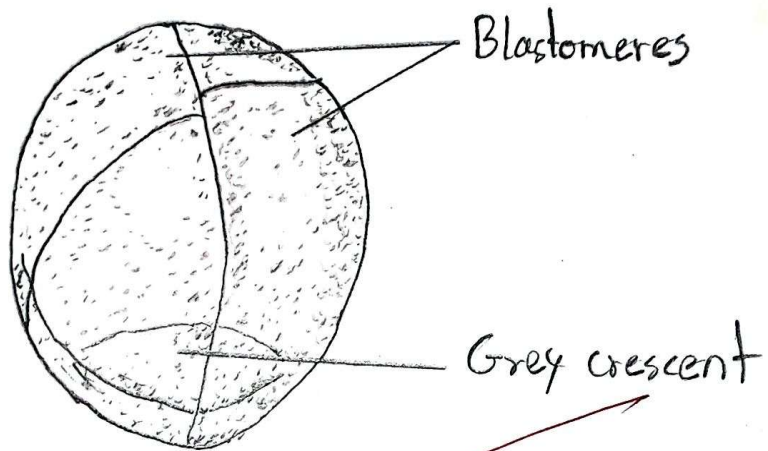


fig. Four celled stage

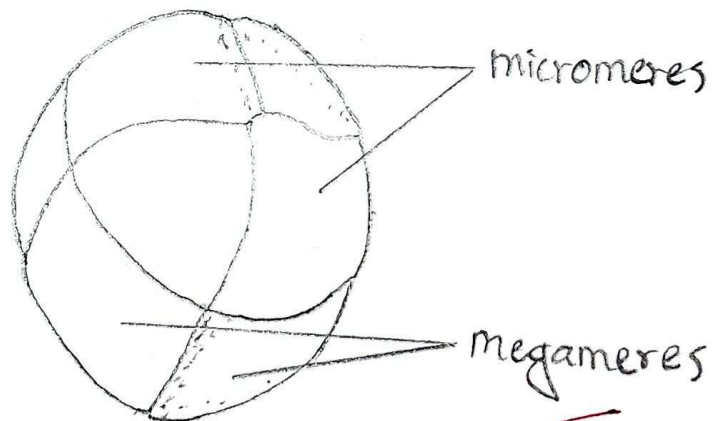


fig. Eight celled stage

~~Vishal~~
~~20/8/17~~

and blastula is formed.

2. It is characterized by the presence of a internal fluid filled cavity known as blastocoel.
3. The blastocoel is surrounded by blastomeres.
4. Blastomeres are distinguished into smaller micromeres and larger megameres.
5. On the upper side of blastocoel or at the animal pole micromeres are present.
6. Megameres are the larger yolk laden cells, which lie at the vegetal pole or lower side of blastocoel.
7. Blastula develops into gastrula.

8) V.S. of Gastrula

1. In gastrula stage, the single layered embryo develops into double layered.
2. It is characterized by the migration and re-arrangement of cells.
3. It includes three important changes occurring simultaneously epiboly, imboly and rotation of embryo.
4. Poorly developed germinal layers are seen.
5. An archenteron appears and blastocoel starts to be narrow.
6. The epidermis is well differentiated in the ventro-lateral portion towards the animal pole.

7. Beginning of formation of neural plate and notochord.
8. The area of endoderm is very well developed.
9. Thin mesoderm is also seen on ventral side towards posterior pole.

TO STUDY EMBRYOLOGICAL SLIDES OF FROG

Roll No. : 11

Date : 2028-08-10

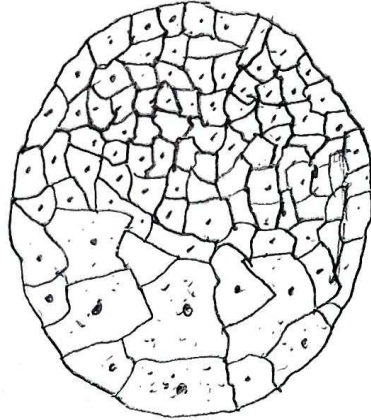


fig. Morula stage

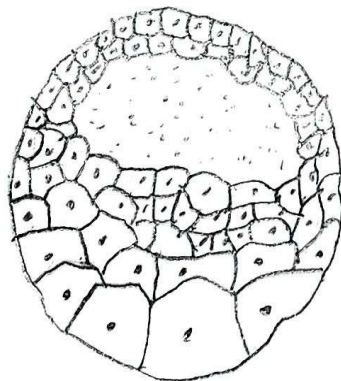


fig. V.S of Blastula

[Signature]
20/8/17

TO STUDY EMBRYOLOGICAL SLIDES OF FROG

Roll No. : 11
Date : 2018-08-10

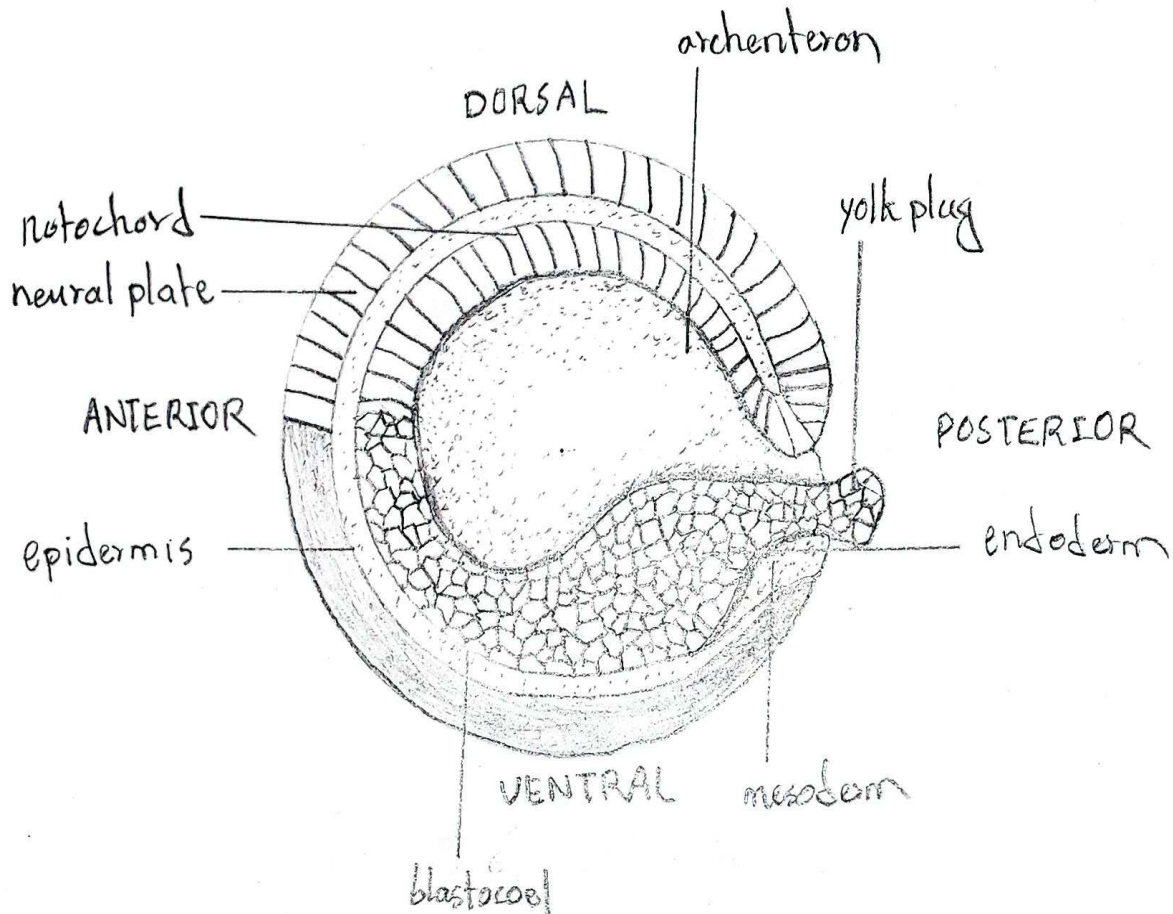


fig. V.S. of gastrula

[Signature]
2018/8/17