

Subject –

Class- 12

Topic – Embryonic development in human

Very Short Answer Questions

1. What is embryogenesis? 101
2. During cleavage which type of cell division takes place? Mitotic
3. What are blastomeres? One of the cells that are produced and th
4. How many blastomeres are there in human morula?
5. What is formed in human from blastopore?

Short Answer Questions

1. How does the blastocyst formation take place in human? 99
2. Mention the difference between blastulation and gastrulation.

Long Answer Type Questions

1. When and how does formation of blastocyst take place in human?
2. Explain gastrulation in human. 94
3. How does a child born in 7th month survive? explain. 101

Embryonic Development in Human

* Ques / Ans: →

1. What is embryogenesis?
Development of embryo from cell division and cell differentiation is called embryogenesis.
2. During cleavage which type of cell division takes place?
Mitotic
3. What are blastomeres?
Blastomeres are one of the cells that are produced during cleavage of a zygote. as cell
4. How many blastomere are there in human morula?
16 blastomeres
5. What is formed in human from blastopore?
Mouth and anus.
6. Mention the difference between blastulation and gastrulation.

S.No.	Blastulation	Gastrulation
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|----|--|---|
| 1. | The process of formation of blastocyst from morula is called blastulation. | The formation of three germinal layer from blastocyst is called gastrulation. |
| 2. | Results from rapid mitotic cell division. | Results from slow mitotic cell division. |
| 3. | Single layered, hollow structure. | Three layered, hollow structure. |
| 4. | Contains 128 cells. | Contains more cells than blastula. |
| 5. | Contains undifferentiated cells. | Contains differentiated cells. |
| 6. | Comprises of zona pellucida. | Lacks zona pellucida. |

7. What is gastrulation in human. Explain.

- Gastrulation is a phase in embryonic development during which the single layered blastula develops into a three layered gastrula.
- Gastrulation takes place after cleavage. The cells in the blastula rearrange themselves spatially to form three layers of cells in a process known as gastrulation.
- During gastrulation the blastula fold in on itself to form three germ layers :- Ectoderm, Endoderm and Mesoderm. These give rise to muscle cells and connective

tissues in body.

Endoderm give rise to columnar cells found in the digestive system and many other internal organs.

8. How does a child born in 7th month survive? Explain.

Upto seven months of embryonic development child hearing organ, internal ear, tear glands, ~~any~~ ability to smell and many other vital body organs are formed ~~and development~~. This is the main reason that embryos can survive.

9. When and how does formation of blastocyst take place in human?

The process of formation of blastocyst from morula is called blastulation.

On reaching of morula in uterus the external / outer suboidal cells become flat and make a layer, this is called trophoblast. By these cells only the embryo gets stuck with the uterus epithelium.

Due to the secretion of uterine fluid into the morula trophoblast separates from inner cell mass. By this one cavity is formed, which is called blastocoel. Liquid is filled in it. As the liquid increases, the shape of the cavity increases, and the internal mass of the cells of embryo gets

located at one place. The trophoblast cells become extremely flat and this stage is called blastocyst. By the trophoblast cells become extremely flat and this stage is called blastocyst. By the trophoblast cells the blastocyst gets stuck / attached to uterine endometrium. The process of attachment of blastocyst to uterine wall is called implantation. In human this type of implantation is called interstitial because the uterine endometrium encircles the blastocyst slowly. As a result blastocyst get implanted into the endoderm (internal layer) of the uterus.