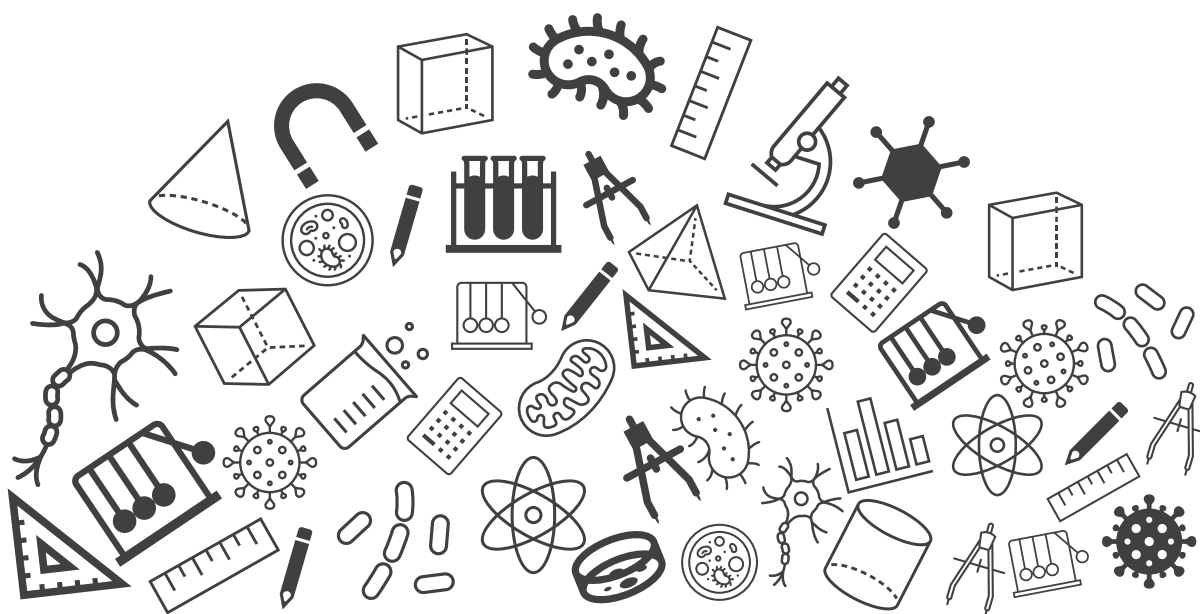




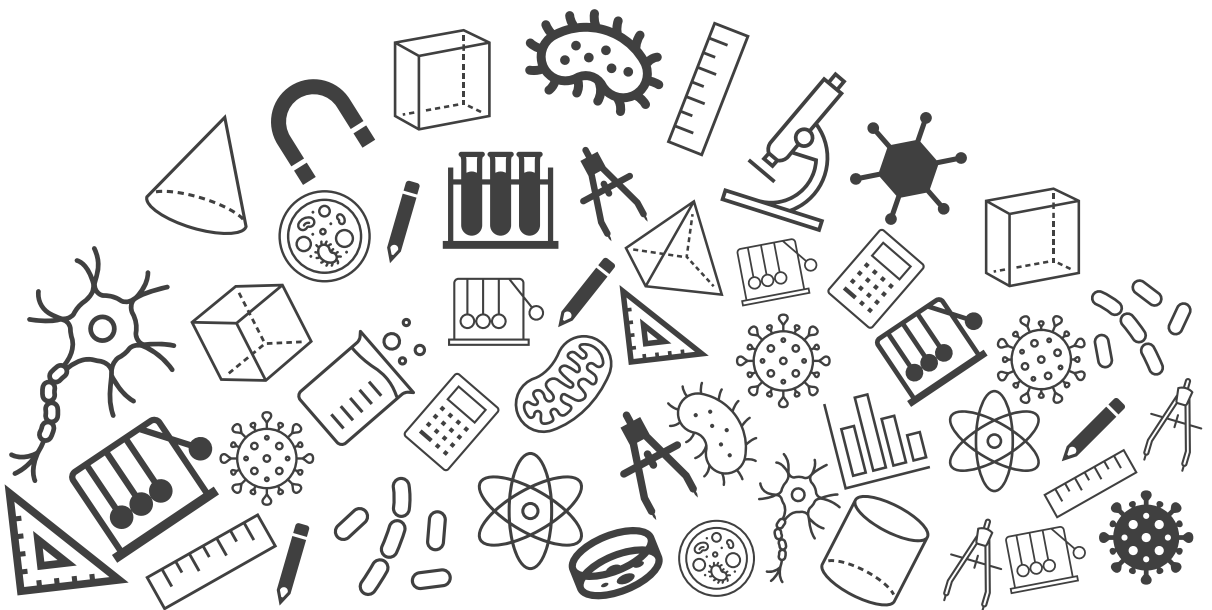
Grade 08 : Science

Exam Important Questions





Reproduction in Animals



Reproduction in Animals

Topic : Exam Important Questions

1. Describe the process of in vitro fertilisation (IVF). [4 marks]

Solution:

- In-vitro fertilisation (IVF) is the process of fertilising an ovum with sperms in a laboratory outside the female body. (0.5 marks)
- During IVF, eggs are retrieved from a healthy female and sperms are collected from a healthy male. (0.5 marks)
- The eggs are then fertilised with the sperms to produce zygote under laboratory conditions. (0.5 marks)
- If a zygote forms, it is allowed to develop for about a week and then the embryo is implanted into the uterus of the female. (1 mark)
- The further development of the embryo and foetus happens inside the uterus and the baby is delivered. (0.5 marks)

2. Differentiate between: [4 marks]

- (a) External fertilisation and internal fertilisation.
(b) Viviparous and oviparous organisms.

Solution:

- (a) Following are the difference between external fertilisation and internal fertilisation: (2 Marks)

<i>External fertilisation</i>	<i>Internal fertilisation</i>
It occurs outside the female body.	It occurs inside the female body.
A large number of male and female gametes are released into the surrounding medium (e.g., water) where fertilisation takes place.	The male gametes are deposited in the body of the female where fertilisation takes place.
As the gametes are released in the surrounding medium a large number of gametes are needed to ensure fertilisation.	The male gamete is deposited in the female body directly so lesser number of gametes are required to ensure fertilisation.

- (b) Following are the difference between oviparous and viviparous organisms: (2 marks)

<i>Oviparous</i>	<i>Viviparous</i>
They lay eggs.	They give birth to young ones.
Both internal and external fertilisation can occur.	Only internal fertilisation occurs.
Examples include hens, ducks, fish etc.	Examples include humans, dogs, elephants etc.

3. What is metamorphosis? Give examples.
[2 marks]

Solution:

- The transformation of a larva into an adult involving sudden and series of continuous changes in the body of an animal during its life cycle is called metamorphosis. (1 mark)
- For example: Frogs, butterflies, silk moths etc. (1 mark)

4. Why does the embryo attaches itself to the uterine wall? [2 marks]

Solution:

- The wall of the uterus has a rich supply of blood vessels and the blood transports nutrients and oxygen. (1 mark)
- The embryo attaches itself to this uterine wall in order to derive nutrition and continue its growth. (1 mark)

Reproduction in Animals

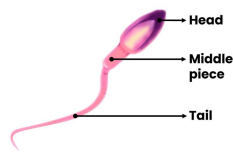
5. Explain the process of development of an embryo. [3 marks]

Solution:

- Fertilisation of male gamete (sperm) and female gamete (egg) results in the formation of zygote. (0.5 marks)
- The zygote divides repeatedly to give rise to a clump of cells called blastocyst. (0.5 marks)
- The blastocyst gets implanted in the wall of the uterus for further development, during which different tissues and organs of the body are formed. This developing structure is called an embryo (1 mark)
- The embryo continues to develop in the uterus. It gradually develops different internal organs including limbs. (0.5 marks)
- This developing stage of embryo is called foetus. (0.5 marks)

6. Describe the structure of a sperm with the help of a labelled diagram. [3 marks]

Solution:

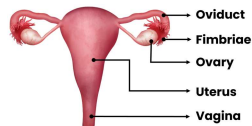


(1 mark)

- The sperm is the male gamete produced in the testes of the male reproductive system. (0.5 marks)
- It consists of three parts - head, middle piece and the tail.
 - The topmost part of the sperm has a peculiar shaped head which contains the male genetic material, i.e., all the genetic information necessary to make a young ones. (0.5 marks)
 - Just below the head is the middle piece and it contains mitochondria which provides the energy to the sperm for movement. (0.5 marks)
 - Just beneath the middle piece, there is a long structure called the tail of the sperm which helps in its movement. (0.5 marks)

7. Draw a labelled diagram of the human female reproductive system and discuss it in details. [5 marks]

Solution:



(2 marks)

- The female reproductive system mainly consists of a pair of ovaries, a pair of oviducts or fallopian tubes, uterus and vagina. (0.5 marks)
- Ovary is the main reproductive organ in the female reproductive system which produces the female gamete (egg/ovum). (0.5 marks)
- On top of the ovaries, there are some finger-like projections called fimbriae. (0.5 marks)
- These fimbriae open into long tube-like structures, around 10-12 cm long known as oviducts or fallopian tubes. (0.5 marks)
- On either side, these fallopian tubes join into an inverted pear-shaped muscular pouch in the centre, resting on the urinary bladder called the uterus. (0.5 marks)
- The uterus opens into a short canal called cervix and finally it leads into an elastic long tube structure called the vagina. (0.5 marks)

Reproduction in Animals

8. How is reproduction in *Hydra* different from that in *Amoeba*? [3 marks]

Solution:

- Following are the differences between reproduction in *Hydra* and *Amoeba* : (3 marks)

	Reproduction in <i>Hydra</i>		Reproduction in <i>Amoeba</i>
i.	Reproduces by bud formation.	<i>i</i>	Reproduces by binary fission.
ii.	Bud develops which further grows and finally detaches from the parent to form a new individual.	<i>ii</i>	A single parent cell divides into two daughter cells.
iii.	Daughter cell is smaller than the parent cell.	<i>iii</i>	Two equal daughter cells are formed.