

MCQs – Gametogenesis & Spermatogenesis (With Explanations)

1. Formation of gametes is called:

- (a) Fertilisation
- (b) Implantation
- (c) Gametogenesis
- (d) Spermiation

Answer: (c) Gametogenesis

Explanation: Gametogenesis is the process of formation of male and female gametes (sperms and ova).

2. Spermatogenesis occurs in the:

- (a) Ovary
- (b) Epididymis
- (c) Seminiferous tubules
- (d) Vas deferens

Answer: (c) Seminiferous tubules

Explanation: Spermatogenesis takes place inside the seminiferous tubules of the testes.

3. Spermatogenesis begins at:

- (a) Birth
- (b) Childhood
- (c) Puberty
- (d) Old age

Answer: (c) Puberty

Explanation: In males, sperm production starts at puberty due to hormonal changes.

4. Spermatogonia are:

- (a) Haploid cells
- (b) Diploid cells
- (c) Polyploid cells
- (d) Enucleated cells

Answer: (b) Diploid cells

Explanation: Spermatogonia contain 46 chromosomes ($2n$) and divide by mitosis.

5. Number of chromosomes in spermatogonia is:

- (a) 23
- (b) 46
- (c) 44
- (d) 22

Answer: (b) 46

Explanation: Spermatogonia are diploid cells having 46 chromosomes in humans.

6. Primary spermatocytes undergo:

- (a) Mitosis
- (b) Binary fission
- (c) Meiosis I
- (d) Budding

Answer: (c) Meiosis I

Explanation: Primary spermatocytes divide by meiosis I to form secondary spermatocytes.

7. Secondary spermatocytes are:

- (a) Diploid
- (b) Haploid
- (c) Triploid
- (d) Tetraploid

Answer: (b) Haploid

Explanation: After meiosis I, chromosome number becomes half, so secondary spermatocytes are haploid.

8. Number of chromosomes in spermatids is:

- (a) 46
- (b) 44
- (c) 23
- (d) 92

Answer: (c) 23

Explanation: Spermatids are haploid cells formed after meiosis II and contain 23 chromosomes.

9. Transformation of spermatids into sperms is called:

- (a) Spermiation
- (b) Spermiogenesis
- (c) Fertilisation
- (d) Implantation

Answer: (b) Spermiogenesis

Explanation: Spermiogenesis is the process in which spermatids change into mature sperm cells.

10. Release of sperms from seminiferous tubules is called:

- (a) Spermiogenesis
- (b) Spermatolysis
- (c) Spermiation
- (d) Insemination

Answer: (c) Spermiation

Explanation: Spermiation is the release of mature sperms from Sertoli cells into the lumen of seminiferous tubules.

11. GnRH is secreted by the:

- (a) Pituitary gland

- (b) Testis
- (c) Hypothalamus
- (d) Thyroid gland

Answer: (c) Hypothalamus

Explanation: Hypothalamus secretes Gonadotropin Releasing Hormone (GnRH).

12. GnRH stimulates the release of:

- (a) Estrogen and progesterone
- (b) LH and FSH
- (c) Testosterone and insulin
- (d) Oxytocin and prolactin

Answer: (b) LH and FSH

Explanation: GnRH stimulates the anterior pituitary gland to release LH and FSH.

13. LH acts on:

- (a) Sertoli cells
- (b) Spermatids
- (c) Leydig cells
- (d) Epididymis

Answer: (c) Leydig cells

Explanation: LH stimulates Leydig cells to produce testosterone.

14. Leydig cells secrete:

- (a) Estrogen
- (b) Progesterone
- (c) Androgens
- (d) Oxytocin

Answer: (c) Androgens

Explanation: Leydig cells mainly secrete testosterone, an androgen hormone.

15. FSH acts on:

- (a) Leydig cells
- (b) Sertoli cells
- (c) Sperms
- (d) Prostate gland

Answer: (b) Sertoli cells

Explanation: FSH stimulates Sertoli cells to support sperm formation.

16. The cap-like structure on sperm head is:

- (a) Tail
- (b) Neck
- (c) Acrosome
- (d) Centriole

Answer: (c) Acrosome

Explanation: Acrosome is a cap-like structure containing enzymes needed for fertilisation.

17. Acrosome contains:

- (a) Hormones
- (b) Enzymes
- (c) DNA only
- (d) Ribosomes

Answer: (b) Enzymes

Explanation: Acrosome contains hydrolytic enzymes that help sperm penetrate the ovum.

18. Middle piece of sperm contains numerous:

- (a) Nuclei
- (b) Ribosomes

- (c) Mitochondria
- (d) Vacuoles

Answer: (c) Mitochondria

Explanation: Mitochondria produce ATP required for sperm movement.

19. Energy for sperm motility is produced by:
- (a) Acrosome
 - (b) Tail
 - (c) Mitochondria
 - (d) Nucleus

Answer: (c) Mitochondria

Explanation: Mitochondria in the middle piece generate energy for movement of sperm tail.

20. Seminal plasma along with sperms forms:
- (a) Urine
 - (b) Semen
 - (c) Plasma
 - (d) Lymph

Answer: (b) Semen

Explanation: Semen is made up of sperms suspended in seminal plasma secreted by accessory glands.