



## BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(MLT)-2022

Course Name – Andrology & Endocrinology

Course Code - BMLTC501

( Semester V )

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) State the primary function of the epididymis:
  - a) Production of sperm
  - b) Storage and maturation of sperm
  - c) Secretion of testosterone
  - d) Transport of urine
- (ii) Select the main component of the seminal fluid:
  - a) Fructose
  - b) Prostaglandin
  - c) Glucose
  - d) All of these
- (iii) Identify the following condition that is characterized by an absence of sperm in the ejaculate:
  - a) Oligospermia
  - b) Asthenospermia
  - c) Teratospermia
  - d) Azoospermia
- (iv) Select cell type is the first to undergo meiosis during spermatogenesis:
  - a) Spermatozoa
  - b) Primary spermatocyte
  - c) Spermatogonia
  - d) Secondary Spermatocyte
- (v) Predict how long does the entire process of spermatogenesis typically take:
  - a) 120 days
  - b) 30 days
  - c) 74 days
  - d) None of these
- (vi) Identify the type of sperm motility that is characterized by a straight line:
  - a) Non-progressive motility
  - b) Immotile
  - c) Progressive motility
  - d) Oscillatory motility
- (vii) A low fructose level in semen may indicate dysfunction of which structure?
  - a) Testis
  - b) Prostate gland
  - c) Bulbourethral glands
  - d) Seminal Vesicles

- (viii) Identify the most common clinical feature of goitre is:
- Hoarseness of voice
  - Neck swelling
  - Difficulty breathing
  - Weight gain
- (ix) Goitre due to Hashimoto's thyroiditis is typically associated with:
- Hyperthyroidism
  - Hypothyroidism
  - Euthyroidism
  - Parathyroid dysfunction
- (x) State the primary source of iodide for the synthesis of thyroid hormones:
- Dietary iodide
  - Skin synthesis
  - Salivary glands
  - Intestinal absorption
- (xi) Report the consequence of iodine deficiency on thyroid hormone synthesis:
- Increased synthesis of T4
  - Decreased synthesis of T3
  - Increased synthesis of T3
  - Increased synthesis of calcitonin
- (xii) Name the hormones from the anterior pituitary whose regulation is stimulated by the release of gonadotropin-releasing hormone (GnRH) from the hypothalamus:
- TSH and ACTH
  - FSH and LH
  - GH and Prolactin
  - MSH and ADH
- (xiii) State the primary role of inhibin in the pituitary-gonadal axis:
- Stimulate GnRH release
  - Increase testosterone production
  - Promote follicle maturation
  - Inhibit FSH release
- (xiv) Identify the type of feedback mechanism that regulates the secretion of TSH from the anterior pituitary:
- Positive feedback
  - Direct stimulation
  - Negative feedback
  - Autocrine signaling
- (xv) In diabetes mellitus, identify the hormone that is deficient or ineffective, leading to hyperglycemia:
- Glucagon
  - Insulin
  - Somatostatin
  - Amylin

### Group-B

(Short Answer Type Questions)

3 x 5=15

- Give examples of some common ART procedures. (3)
- Report how iodine deficiency affect thyroid function and hormone production. (3)
- Name the main hormones secreted by the pancreas, and state their primary functions. (3)
- Explain the process of capacitation and its significance for fertilization. (3)
- Illustrate the process of intracytoplasmic sperm injection (ICSI). (3)

OR

Analyze the benefits of PGT. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

- Illustrate the roles of luteinizing hormone (LH) and follicle-stimulating hormone (FSH) in spermatogenesis. (5)
- Evaluate the potential effects of anabolic steroid abuse on spermatogenesis and overall male fertility. (5)
- Illustrate the Inhibin-Activin cross-talk in regulation of spermatogenesis. (5)
- Determine how pancreatic hormones interplay in blood glucose homeostasis maintenance. (5)

11. Write about the Pituitary-Gonadal Axis. (5)  
12. Illustrate the recent advancements in ART technologies. (5)

OR

Contrast the cryopreservation of embryos, eggs, and sperm. (5)

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