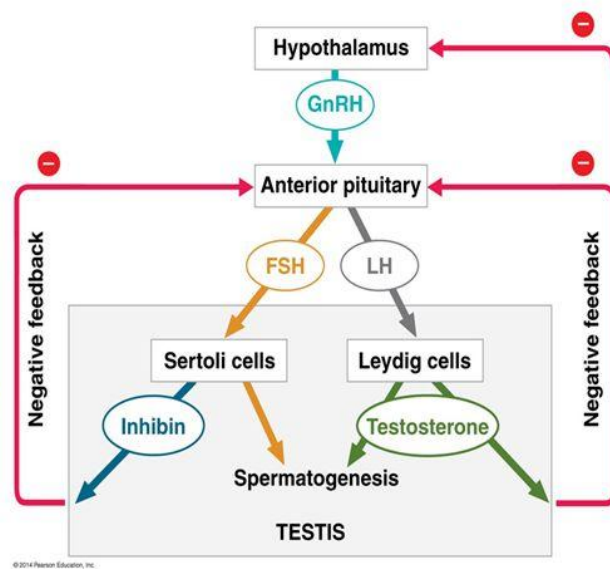


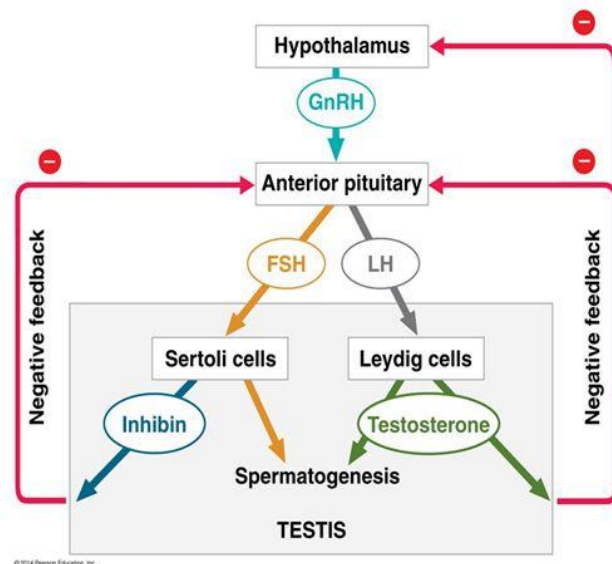
9.3 Human reproductive system (b) Explain the roles of **hormones in spermatogenesis**

- GnRH **stimulates** the anterior pituitary gland to **secrete** two gonadotropic hormones: **Follicle Stimulating Hormone (FSH) & Luteinising Hormone (LH)**.



Role of hormones in spermatogenesis

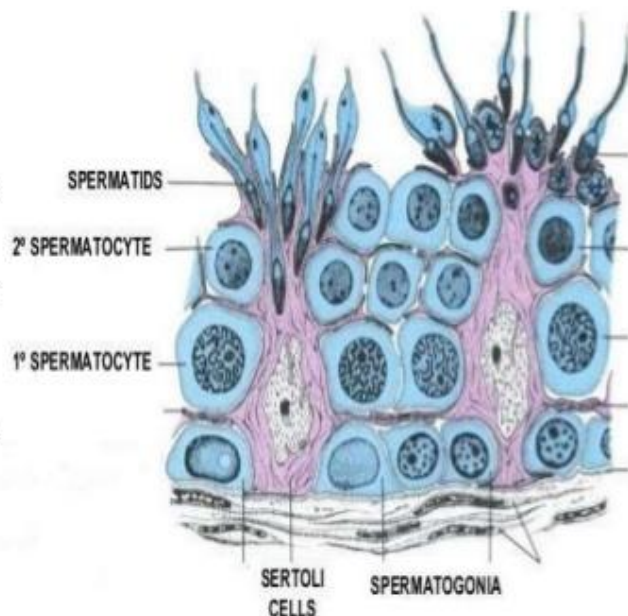
- At puberty, the hypothalamus **secretes** **Gonadotropin Releasing Hormone (GnRH)**.



6

FUNCTIONS OF SERTOLI CELLS

- Columnar irregular epithelial cells having cytoplasmic appendages (Sustentacular cells /mother cells)
- **NOURISHMENT AND SPERMATOGENESIS**
- **BLOOD TESTIS BARRIER** formation by tight junctions.
- **PROVIDE STRUCTURAL SUPPORT** → by forming adhering & gap junctions with all stages of sperm cells.
- **SYNTHETIC FUNCTIONS** → Hormones (Anti mullerian hormone, inhibin, activin) ,Androgen binding proteins, plasminogen activator
- **RECEPTORS** → androgen and FSH receptors
- **AROMATASE ENZYME**
- **PHAGOCYTOSIS**
- **TUBULAR FLUID SYNTHESIS**
- **OSMOTIC GRADIENT**



Leydig Cells:

- Produce androgens testosterone, androstenedione and dehydroepiandrosterone (DHEA)
 - Increase spermatogenesis
 - Influence secondary sexual characteristics
- Stimulated to produce androgens by luteinizing hormone (LH)
 - FSH increases the response to LH by Leydig cells

