# ReproductiveSystems

## 1 Mark Questions

**1.Why are humans testes located outside the abdominal cavity?Name the pouch in which they are present. [All India 2014]**

**Ans**.Human testes are located outside the abdominal cavity as it helps in maintaining low temperature, (2-2.5°C lower than body temperature), required for spermatogenesis.Testes are enclosed in a pouch called scrotum.

**2.Write the location and functions of following in human testes.**
**(i)Sertoli cells**
**(ii)Leydig cells [All India 2014]**

**Ans**.(i) Location of Sertoli cells Within the lining of seminiferous tubule of testis.
Function of Sertoli cells They provide nutrition to the developing sperm cells.
(ii) Location of Leydig cells In the interstitial spaces between the seminiferous tubules.
Function of Leydig cells It synthesises and secrete hormones androgens, e.g. testosterone

**3.List the different parts of human oviduct through which the ovum travels till it meets the sperm for fertilisation.[Delhi 2014 C]**

**Ans**.The different parts of human female oviduct through which the ovum travels, till it gets fertilised are given below in the sequence.
(i) Fimbriae, finger-like projections Collect or catch the ovum, after ovulation.
(ii)Infundibulum Ovum from fimbriae is guided into funnel-shaped infundibulum, part of Fallopian tube.
(iii) Ampulla A wider part of oviduct that leads ovun into isthmus.
(iv) Isthmus With narrow lumen, and in the portion or junction of ampulla-isthmus, the ovum gets fertilised..

**4.Write the location and function of Sertoli cells in humans.[Delhi 2012]**

**Ans**.Location of Sertoli cells Within the lining of seminiferous tubule of testis.
Function of Sertoli cells They provide nutrition to the developing sperm cells.

## 2.Mark Questions

**5.Where are fimbriae present in a human female reproductive system. Give their function. [Delhi 2009]**

**Ans**.Fimbriae are present in funnel-shaped edges of the Fallopian tube or oviduct in human female reproductive system. They help in the collection of ovum/secondary oocyte after ovulation.

**6.Where are Leydig cells present? What is their role in reproduction? [All India 2009]**

**Ans**.Location of Leydig cells In the interstitial spaces between the seminiferous tubules.
Function of Leydig cells It synthesises and secrete hormones androgens, e.g. testosterone

# 3 Marks Questions

**7.Name and explain the role of inner and middle walls of human uterus. [Delhi 2014]**

**Ans**.The innermost wall of uterus is called endometrium.

**Role of Endometrium**

(i) It lines the uterine cavity and is glandular in nature

(ii)It undergoes cyclical changes during menstrual cycle.

The middle wall or layer of uterus is called myometrium.

**Role of Myometrium**

(i) It is made up of thick layer of smooth muscles.

(ii) It shows strong contractions during delivery of baby.

**8.Draw a labelled diagrammatic view of human male reproductive system.[Delhi 2014]**

**Ans**.**Male reproductive system**

Male reproductive system includes a pair of testes, accessory ducts, glands and the external genitalia.

(i)**Testes** are located outside the abdominal cavity within a pouch called Scrotum maintains the low temperature of the testes (2-2.5°C lower than the normal body temperature) required for spermatogenesis.

(a)Each testis is oval-shape (length 4-5 cm and width 2-3 cm) and covered by a dense covering called **tunica albuginea**.

(b)Internally it is divided into about 250 compartments known as **testicular lobules.**

(c)Each lobule contains 1-3 highly coiled (structural and functional units of testis) called **seminiferous tubules** in which sperms are produced.

(d)Seminiferous tubule is lined on its inside by two types of cells called **male germ cells** (spermatogonia) and **Sertoli cells.**

(e)Male germ cells undergo meiotic divisions finally leading to sperm formation.

(f)Sertoli cells provide nutrition to the germ cells.

(g)Interstitial spaces are present in outside regions of seminiferous tubules which contain small blood vessels and interstitial cells or Leydig cells.

(h)Leydig cells synthesise and secrete the testicular hormones called **androgens**

(ii)**Male accessory ducts** include rete testis, vasa efferentia, epididymis and vas deferens.

(a)The intratesticular duct system starts with tubuli recti, which are short, straight end segments of the seminiferous tubules. These tubules connect the seminiferous tubules to the highly anastomosing, cuboidal epithelium-lined channels called **rete testis.**

(b)From rete testis, 10-25 fine tubules arise called **vasa efferentia** that leave the testis and open into the epididymis.

(c)**Epididymis** leads to vas deferens that ascends to the abdomen and loops over the urinary bladder

Urinary bladder receives a duct from the seminal vesicle to form ejaculatory duct that runs through the prostate and opens into urethra.
(e) Urethra receives the ducts of prostate gland and the bulbourethral gland (Cowper's glands) a little ahead and runs through the penis to its external opening called urethral meatus.
(iii) The **accessory glands** of male reproductive system include
(a)A pair of **seminal vesicles**, a **prostate gland** and a pair of **bulbourethral glands** (Cowper's glands).
(b)The secretion of all these glands is called **seminal plasma**
(c)Seminal plasma contains fructose, calcium and some enzymes. It is to provide nutrition to the spermatozoa, while travelling through female reproductive tract.
(d)Seminal plasma along with sperms is called **semen.**
(e)Secretion of bulbourethral glands also helps in the lubrication of the penis.
(iv)**External genitalia** is the penis. It is made up of special erectile tissue that helps in erection of the penis. The enlarged tip of the penis is called glans penis. It is covered by a loose fold of skin called **foreskin** or **prepuce.**

**9.Draw a labelled diagram of the reproductive system in human female.[All India 2011]**
**Ans. Female reproductive system**
Female reproductive system consists of a pair of ovaries, secondary sex organs, external genitalia and mammary glands.
(i)**Ovaries** are primary female sex organs which produce female gametes called ova and secrete the female sex hormones.
(a)These are located one on each side of the lower abdomen.
(b)It is almond-shaped, 2-4 cm in length, 1.5 cm in width.
(c)It is connected to the pelvic wall and uterus by ligaments.
(d)Each ovary is covered by a thin epithelium which encloses the ovarian stroma.
(e)Stroma is divided into two regions, i.e. peripheral cortex and inner medulla.
(ii)The female **accessory ducts** constitute **oviducts** (Fallopian tubes), **uterus** and **vagina.**
(iii)Each Fallopian tube is about 10-12 cm long and extends from the periphery of each ovary to the uterus.

(c)Infundibulum leads to a wider part of the oviduct called
(d)**Isthmus** is the last part of the oviduct, which has a narrow lumen and it joins the uterus.
(iv)**Uterus** or **womb** is a pear-shaped muscular organ. It is attached to the pelvic wall and supported by ligaments.
(a)Wall of the uterus has three layers of tissue.
(b)**Perimetrium** is the outermost thin membranous layer, **myometrium** is the middle thick layer of smooth muscles and **endometrium** is the innermost glandular layer which lines the uterine cavity.
(c)Uterus opens into the **vagina** through a narrow cervix, its cavity is called cervical canal, which along with vagina forms birth canal.
(d)Endometrium layer undergoes cyclic changes during menstrual cycle.
(e)Smooth muscles in myometrium contract during parturition to deliver the baby.
(v)**Vagina** is a muscular tube-like structure that opens to the outside. It receives spermatozoa during insemination and serve as birth canal.
(vi)**Female external genitalia** include mons pubis, labia majora, labia minora, clitoris and hymen.
(a)**Mons pubis** is a cushion of fatty tissue covered by skin and pubic hair.
(b)**Labia majora** are fleshy folds of tissue which extend down from the mons pubis and surround the vaginal opening.
(c)**Labia minora** are paired folds of tissue under the labia majora.
(d)**Hymen** is a membrane that covers the opening of vagina partially. It gets ruptured during vigorous physical activities or during the first coitus.
(e)**Clitoris** is a tiny finger-like structure, which lies at the upper junction of the two labia minora above the urethral opening.
(vii)**Mammary glands** (breasts) are paired structures that contain glandular tissue and variable amount of fat.
(a)Glandular tissue of each mammary gland is divided into 15-20 mammary lobes containing the cluster of cells called alveoli.
(b)The cells of alveoli secrete milk, which is stored in the cavities (lumen) of alveoli.
(c)Alveoli open into mammary tubules. The tubules of each lobe join to form a mammary duct.
(d)Several mammary ducts join to form a wider mammary ampulla, which is connected to lactiferous duct through which milk is sucked out.