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1. Write short notes on the following

(a) SPERMATOGENESIS; Sperm cells are continually being produced by the testes. One immature germ cell takes as long as 74 days to reach final maturation, and during this growth process there are intermittent resting phases.Human male testis, epididymis, and ductus deferens.

 Spermatogenesis is the process of the production of sperms from the immature germ cells in males. It takes place in seminiferous tubules present inside the testes. During spermatogenesis, a diploid spermatogonium (male germ cell) increases its size to form a diploid primary spermatocyte. This diploid primary spermatocyte undergoes first meiotic division (meiosis I), which is a reductional division to form two equal haploid secondary spermatocytes. Each secondary spermatocyte then undergoes second meiotic division (meiosis II) to form two equal haploid spermatids. Hence, a diploid spermatogonium produces four haploid spermatids. These spermatids are transformed into spermatozoa (sperm) by the process called spermiogenesis.

(b) TESTOSTERONE; Testosterone is one of the hormones amongst a group of hormones known as androgens. It is the primary sex hormone produced by males. While testosterone is best known as a male hormone that maintains typically male characteristics of the body (e.g. facial hair), testosterone is produced by both male and female bodies. It fulfils important functions for both men and women, most prominently in regulating the sex drive. However, men produce much larger quantities of testosterone compared to women.

Testosterone is responsible for the development of secondary sexual organs like epididymis and seminal vesicle in males and also responsible for the development of male sexual characteristics such as body and facial hairs, deepening of the voice, enlargement of genitalia, growth of skeletal muscles, and bone development.

(C) SEMEN; Semen, also called seminal fluid, fluid that is emitted from the male reproductive tract and that contains sperm cells, which are capable of fertilizing the female eggs. Semen also contains other liquids, known as seminal plasma, which help to keep the sperm cells viable.Most of the fluid in semen is made up of secretions from male reproductive organs. Semen contains citric acid, free amino acids, fructose, enzymes, phosphorylcholine, prostaglandin, potassium, and zinc.

(D) MALE ORGASM; The orgasm itself occurs in two phases, emission and ejaculation. In emission, the man reaches ejaculatory inevitability, the "point of no return." Semen is deposited near the top of the urethra, ready for ejaculation. Ejaculation occurs in a series of rapid-fire contractions of the penile muscles and around the base of the anus. Involuntary pelvic thrusting may also occur. The nerves causing the muscle contractions send messages of pleasure to the man's brain. The story of the orgasm begins with sensory and mental stimulation in which the brain sends nerve messages to the penis in order to stimulate it and produce an erection. During sexual arousal, impulses from the brain and nerves in the penis cause the arterial muscles of the corpora cavernosa to relax, allowing blood to flow in and fill the open spaces. The blood creates pressure within the corpora cavernosa, making the penis expand, thereby creating an erection. The membrane surrounding the corpora cavernosa, the tunica albuginea, helps trap the blood in the corpora cavernosa, by occluding the venous outflow, and sustain the erection. The erection is lost when arterial muscles in the penis contract after ejaculation, stopping the inflow of blood and opening outflow channels.

(E) MALE INFERTILITY; Infertility is a disease of the reproductive system. It makes a person unable to have children. It can affect a man, a woman, or both. Male infertility means that a man has a problem with his reproductive system. This problem may be caused by many different conditions, including: Infections or inflammatory conditions. One example is infection with the mumps virus after puberty.

1.Hormone or pituitary gland problems.

2.Immune problems in which you make antibodies against your own sperm.

3. Environmental and lifestyle factors. These include tobacco use, heavy alcohol use, marijuana or steroid use, or exposure to toxins.

4.Genetic diseases, such as cystic fibrosis or hemochromatosis.

Other factors may include erectile dysfunction or premature ejaculation. Liver or kidney disease, or treatment for seizure disorders are examples of problems that can cause infertility. Treatment depends on what is causing your infertility. Treatments include artificial insemination, medicines, and surgery.