

# **SHORT QUESTION AND ANSWER**

**B. PHARMACY SEMESTER - II**

**SUBJECT NAME: HUMAN ANATOMY AND PHYSIOLOGY-II**

**SUBJECT CODE: BP201TP**

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## B.PHARM SEM – II SHORT QUESTION AND ANSWER CHAPTER 1

### NERVOUS SYSTEM

#### CENTRAL NERVOUS SYSTEM

##### 1. Brain consist how many number of neurons ?

- Brain consist 100 billion neurons

##### 2. Classify the types of neurons?

- According to functions: 1. Sensory 2. Motor
- According to Shape: 1. Unipolar 2. Bipolar 3. Multipolar
- According to myelin sheath: 1. Myelinated 2. Non-myelinated

##### 3. Classify the parts of brain.

Brain mainly divided into four parts:

1. **Brain Stem:** It is the superior portion and continuous with the spinal cord consist medulla oblongata, pons and midbrain.
2. **Cerebellum:** It located posterior to the brain stem.
3. **Diencephalon:** It is located superior to the brain stem. It consist thalamus, epithalamus, subthalamus, hypothalamus and pineal gland.
4. **Cerebrum:** It look like cap of mushroom. It occupies the most of the part of cranium and it is divided into right and left halves known as cerebral hemispheres.

##### 4. According to embryonic development brain divided in how many number of primary vesicles?

According to the embryonic development brain is divided mainly into the three parts at the third weeks of embryonic development which is also known as primary brain vesicles:

1. Prosencephalon – Forebrain
2. Mesencephalon – Midbrain
3. Rhombencephalon – Hindbrain

##### 5. According to embryonic development brain divided in how many number of secondary vesicles?

During the further development of the embryo primary vesicles is divided and form secondary vesicles at the 5<sup>th</sup> weeks of embryonic development.

- Procencephalon develop telencephalon and diencephalon
- Mesencephalon develop midbrain
- Rhombencephalon develop metencephalon and Myelencephalon

##### 6. At the final stage of embryonic development how the brain form from the secondary vesicles?

At the final stage of embryonic development:

- Telencephalon forms cerebrum
- Diencephalon forms epithalamus, hypothalamus, subthalamus, thalamus and pineal gland
- Metencephalon forms pons and cerebellum
- Myelencephalon forms medulla oblongata

##### 7. Who protect the brain?

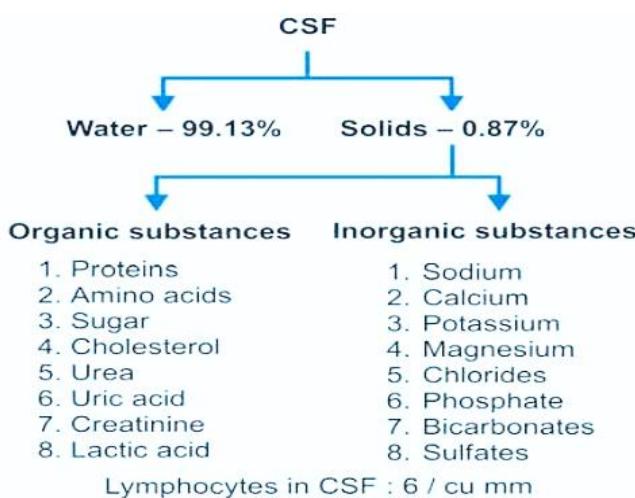
- Cranial bones and cranial meninges mainly protect the brain.

## B.PHARM SEM – II SHORT QUESTION AND ANSWER

- 8. Entire nervous system consist how much amount of Cerebrospinal Fluid (CSF)?**
- The entire central nervous system contains between 80 – 150 mL of CSF, and about 500 mL is generated every day.

**9. Explain the composition of CSF**

Compositions of cerebrospinal fluid:



### Composition of CSF

Substance	Plasma	CSF
Na <sup>+</sup> (mEq/l)	145.0	150.0
K <sup>+</sup>	4.8	2.9
Ca <sup>++</sup>	5.2	2.3
Mg <sup>++</sup>	1.7	2.3
Cl <sup>-</sup>	108.0	130.0
HCO <sub>3</sub> <sup>-</sup>	27.4	21.0
Lactate	7.9	2.6
PO <sub>4</sub> <sup>3-</sup>	1.8	0.5
Protein	7000.0	20.0
Glucose	95.0	60.0

(protein and glucose expressed as mg/100 ml)

**10. Explain the function of cerebrospinal fluid.**

Functions of cerebrospinal fluid (CSF):

1. Mechanical Protection:
  - Cerebrospinal fluid absorb the shock and protect the delicate tissue of the brain and spinal cord.
  - It also act as a lubricating fluid and reduce the friction during the movement.
2. Chemical Protection:
  - It maintain the electrolytes and chemical balance which is required for regulation of post synaptic potential and action potential.
3. Provide nutrients:
  - It provide the essential nutrient through the circulation in brain and spinal cord.
4. Provide immunity:
  - It consist some amount of the WBCs which can fight against the harmful bacteria and virus.
5. Remove the toxin:
  - CSFs remove the metabolites, waste products and toxin from the brain and spinal cord through the circulation.

**11. Name the site of CSF production in the brain.**

- CSF is produced mainly by a structure called the choroid plexus in the lateral, third and fourth ventricles. CSF flows from the lateral ventricle to the third ventricle through the interventricular foramen

**12. Give the name of the ventricles present in the forebrain.**

- The **ventricular** system is composed of 2 lateral **ventricles**, the third **ventricle**, the cerebral aqueduct, and the fourth **ventricle**

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### 13. Enlist cranial nerves and their functions.

Number	Name	Function
I	Olfactory	Sense of smell
II	Optic	Vision
III	Oculomotor	Motor control of some eye muscles and eyelid
IV	Trochlear	Motor control of some eye muscles
V	Trigeminal	Chewing muscles and some facial sensation
VI	Abducent	Motor control of some eye muscles
VII	Facial	Motor control of facial muscles, salivation. Taste and cutaneous sensations.
VIII	Acoustic	Equilibration, static sense and hearing
IX	Glossopharyngeal	Salivation, sensations of skin, taste and viscera
X	Vagus	Motor control of the heart and viscera, sensation from the thorax, pharynx and abdominal viscera
XI	Accessory	Motor impulses to the pharynx and shoulder
XII	Hypoglossal	Motor control of the tongue, some skeletal muscles, some viscera, sensation from skin and viscera

### 14. Give the important function of hypothalamus.

- Body Temperature
- Thirst
- Appetite And Weight Control
- Emotions
- Sleep Cycles
- Sex Drive
- Childbirth
- Blood Pressure And Heart Rate
- Production Of Digestive Juices
- Balancing Bodily Fluids

### 15. State the position of gray and white matter in the medulla oblongata and cerebrum.

- In the cerebral hemisphere, there is an outer “rind” of gray matter and deep to that is white matter with a few scattered islands of gray matter.

### 16. Which part of the brain is the largest part?

- The cerebrum is the largest and most highly developed part of the human brain.

### 17. Give the name of 5 lobes of brain.

- Each cerebral hemisphere is divided into five lobes, four of which have the same name as the bone over them: the frontal lobe, the parietal lobe, the occipital lobe, and the temporal lobe. A fifth lobe, the insula or Island of Reil, lies deep within the lateral sulcus.

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### 18. Enlist spinal nerves.

- 31 pairs: 8 cervical, 12 thoracic, 5 lumbar, 5 sacral, and 1 coccygeal.

### 19. Enlist protective layers of spinal cord.

- The meninges refer to the membranous coverings of the brain and spinal cord. There are three layers of meninges, known as the dura mater, arachnoid mater and pia mater.

### 20. State the position of gray and white matter in the spinal cord.

- Outer white matter and inner grey matter

### 21. What is neuroglia ?

It glia means glue like structure which cover the neurons. It is smaller than neurons.

There are two types of neuroglia according to their location:

1. CNS located neuroglia:
  - a. Astrocyte
  - b. Olegodendrocytes:
  - c. Microglia:
  - d. Ependymal:
2. PNS located neuroglia
  - a. Neurolemmocytes (schwann cells):
  - b. Satellite cells:

**B.PHARM SEM – II SHORT QUESTION AND ANSWER**  
**CHAPTER 2**

DIGESTIVE SYSTEM

**1. What is digestive system**

- Digestive system consisting digestive organs the collectively performs the mastication, digestion, absorption, ejection that constitute digestive system.

**2. Define digestion.**

- The breakdown of the large and complex molecules into smaller and simpler molecules with the effects of enzymes is called as digestion.

**3. Enlist the parts and the accessory digestive organs of digestive system with their functions.**

Sr. No.	Organ	Secretion	Enzyme/ chemical	Act on substance	Function
1.	<b>Mouth/ Oral cavity:</b>				
	Lips				Gate of digestive system
	Teeth				Cutting, tearing, crushing & grinding of food
	Salivary glands	Saliva	Ptyline	Carbohydrates	Make food moist, smooth & palatable Digestion of carbohydrates
	Tongue				Taste, mastication, deglutition, speech & moistening
2.	Pharynx				Transport of food, air, production of voice
3.	Oesophagus	mucus			Transmission of food to stomach by peristalsis
4.	Stomach	Gastric juice	Pepsin, HCl, Renin	Emulsified fats	Digestion of fat, protein, coagulation of milk
5.	Duodenum				Absorption of water, alcohol, saline, glucose.
6.	Liver & gall bladder	Bile	Alkaline salts	Fats	Emulsification of fats Changes of ph to alkaline Excretion
7.	Pancreas	Pancreatic juice	Trypsin Steapsin Amylase	Peptones, Fats, Disaccharides	Partial digestion of carbohydrates, protein, and fats.
8.	Small intestine	Intestinal juice	Erepsin, Maltase, lactase, sucrease lipase	Polypeptide, maltose, sucrose, fats, lactose	Digestion of proteins, lipids and carbon Abosorption.
9.	Large intestine	Mucus	mucus	Microbial organism act on undigested food	Absorption of amino acids, water, vitamins
10.	Rectum				Reservoir of faeces
11.	Anus				Defecation

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### 4. Give composition of gastric juice.

- Dil. HCl, mucus and enzymes rennin, pepsin, gastric lipase, intrinsic factors.

### 5. Name the enzymes present in pancreatic juice.

- Trypsin (act on peptones), steapsin (act on fats), amylase (act on disaccharides).

### 6. Name the 4 layers of small intestine.

- Serosa
- Muscularis
- Submucosa
- Mucosa
- Muscularis mucosa
- Lamina propria
- Epithelial

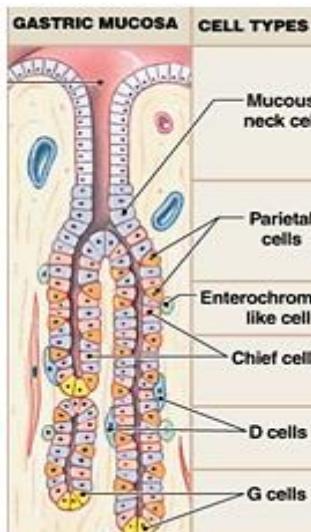
### 7. Give four function of liver

- Carbohydrate metabolism- gluconeogenesis, glycogenolysis, glycogenesis
- Lipid metabolism
- Protein metabolism
- Synthesis og bile salts, coagulation factors
- Break down of heamoglobin

### 8. Name the different parts of large intestine.

- Cecum
- Colon
- Acending colon
- Trasnverse colon
- Desendging colon
- Sigmoidal colon

### 9. Histology of stomach

GASTRIC MUCOSA	CELL TYPES	SUBSTANCE SECRETED	STIMULUS FOR RELEASE	FUNCTION OF SECRETION
	Mucous neck cell	Mucus	Tonic secretion; with irritation of mucosa	Physical barrier between lumen and epithelium
		Bicarbonate	Secreted with mucus	
Parietal cells	Gastric acid (HCl)		Acetylcholine, gastrin, histamine	Activates pepsin; kills bacteria
	Intrinsic factor			Complexes with vitamin B <sub>12</sub> to permit absorption
Enterochromaffin-like cell	Histamine		Acetylcholine, gastrin	Stimulates gastric acid secretion
Chief cells	Pepsin(ogen)		Acetylcholine, acid secretion	Digests proteins
	Gastric lipase			Digests fats
D cells	Somatostatin		Acid in the stomach	Inhibits gastric acid secretion
G cells	Gastrin		Acetylcholine, peptides, and amino acids	Stimulates gastric acid secretion

### 10. Daily secretion of GIT fluid

#### Daily Secretion of Intestinal Juices

	Daily Volume (ml)	pH
Saliva	1000	6.0–7.0
Gastric secretion	1500	1.0–3.5
Pancreatic secretion	1000	8.0–8.3
Bile	1000	7.8
Small intestine secretion	1800	7.5–8.0
Brunner's gland secretion	200	8.0–8.9
Large intestinal secretion	200	7.5–8.0
Total	6700	

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**CHAPTER 3**

**RESPIRATORY SYSTEM**

**1. Explain the pattern of respiration.**

- i. Pulmonary ventilation: Exchange of gases between environment and lungs
- ii. External respiration: Exchange of gases between lungs and blood
- iii. Internal respiration: exchange of gases between blood and cells

**2. Name the organs of respiratory system.**

**Organs of Respiratory System:**

- Nose
- pharynx
- larynx
- trachea
- primary bronchi
- lungs: Bronchioles , alveoli/respiratory membrane

**3. Enlist the parts of pharynx.**

- i. Nasopharynx
- ii. Oropharynx
- iii. Laryngopharynx

**4. Nasopharynx consist how much opening.**

Nasopharynx consist 5 opening in its wall.

- i. Two opening of internal nares
- ii. Two opening of auditory tubes (Eustachian Tube)
- iii. One opening of oropharynx

**5. State the functions of respiratory system.**

- The functions of the respiratory system include
  - i. Gas exchange,
  - ii. Acid-base balance,
  - iii. Phonation [the production or utterance of speech sounds],
  - iv. Pulmonary defense and metabolism.

**6. Name the 9 cartilages of larynx**

- The laryngeal skeleton is **nine cartilages**:
  - ✓ **3 Unpaired Cartilages**:-thyroid **cartilage**, cricoid **cartilage**, epiglottis,
  - ✓ **3 Paired Cartilages**:- arytenoid **cartilages**, corniculate **cartilages**, & cuneiform **cartilages**

**7. State reason the voice box of women is high pitched as compared to men**

- The pitch of a sound is determined by its frequency. The higher the pitch higher the voice.
- As the sounds produced by vocal cords of women are higher than men so women have shriller voices than men.
- Because their vocal cord is of smaller size.

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### 8. How many lobes are present in each lung?

- Right side – 3 lobes
- Left side- 2 lobes

### 9. Differentiate between right lung and left lung.

	Right lung	Left lung
length	Shorter.	Longer.
width	Wider.	Narrower.
lobes	3 (upper, middle and lower).	2 (upper and lower).
fissures	oblique, horizontal.	Oblique.
cardiac notch	absent.	present.
Lingula	absent.	present.

### 10. Each minute adult human doing how many number of respiration?

- Healthy adult doing 12 respiration in each minute.

### 11. What is tidal volume?

- Air breath in one respiration is known as tidal volume i.e 500 mL

### 12. What is total lungs volume/minute volume capacity of lungs?

Healthy adult can do 12 respiration in a minute and take 6 liters of air in and out is known as lungs volume capacity.

#### Calculation:

Tidal Volume: 500 mL

Inspiratory Reserve Volume (IRV) = 3100 mL (Tidal volume + IRV known as Inspiratory Capacity = 3600 mL)

Expiratory Reserve Volume (ERV) = 1200 mL

Residual Volume = 1200 mL (ERV + Residual Volume known as Functional Residual Capacity = 2400 mL)

Vital Capacity = Sum of IRV + Tidal Volume + ERV  
= 3100mL + 500mL + 1200mL = 4800 mL

Total Lungs capacity = sum of Tidal Volume + IRV + ERV + Residual Volume  
= 500mL + 3100mL + 1200mL + 1200 mL  
= 6000mL = 6L

**B.PHARM SEM – II SHORT QUESTION AND ANSWER**  
**URINARY SYSTEM**

**1. State the 3 functions of kidney**

The 7 functions of the kidneys: **A WET BED**

- A – Acid-base balance.
- W – Water balance.
- E – Electrolyte balance.
- T – Toxins and waste products removal from the body.
- B – Blood pressure control.
- E – Erythropoietin hormone production for RBCs synthesis.
- D – Vitamin – D<sub>3</sub> formation - calcitriol .

**2. State the reason the right kidney is slightly below than the position of left kidney.**

- In humans, the kidneys are located in the abdominal cavity. The right kidney is placed at a slightly lower level than the left kidney in order to accommodate the largest gland/organ of the body, the liver.

**3. Layer of kidney**

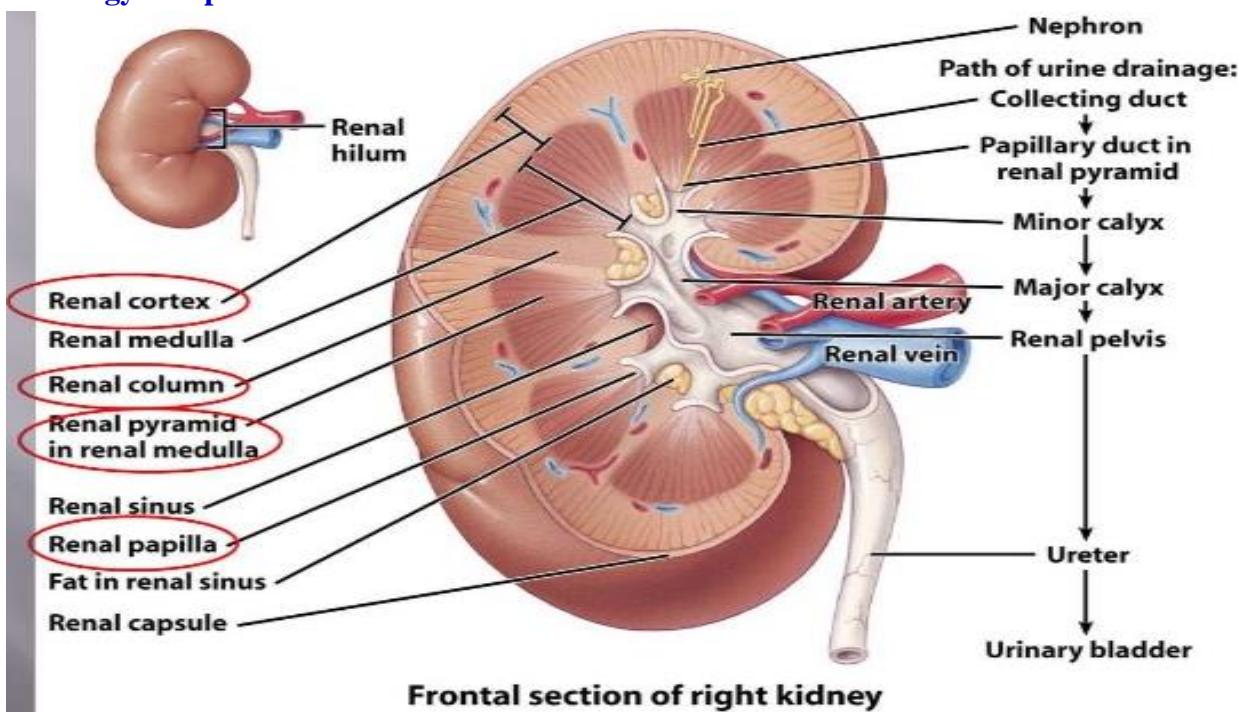
- i. Renal Capsul
- ii. Adipose capsule
- iii. Renal facia

**4. Introduction of kidney**

- The paired kidneys are reddish (purplish-brown organs) in color and it is bean shaped.
- They are located just above the waist between the peritoneum and posterior wall of the abdominal cavity so it is also known as retroperitoneal organs.
- It is located at the level of last thoracic and third vertebrae as well as it is partially protected by the eleventh and twelfth pair of ribs.
- Right kidney is slightly lower than the left kidney because right lobes of the kidney occupied more space than the left lobes.
- Adult kidney is 9–12 cm long, 6–9 cm wide and 3 cm thick.
- Each kidney weighs about 125–175 g in males and 115–155 g in females.
- The medial surface of the kidney is concave with a deep vertical fissure known as hilum through which ureters leaves kidney as well as blood, lymphatic vessels and nerves exit and enter the kidney through the renal hilus.

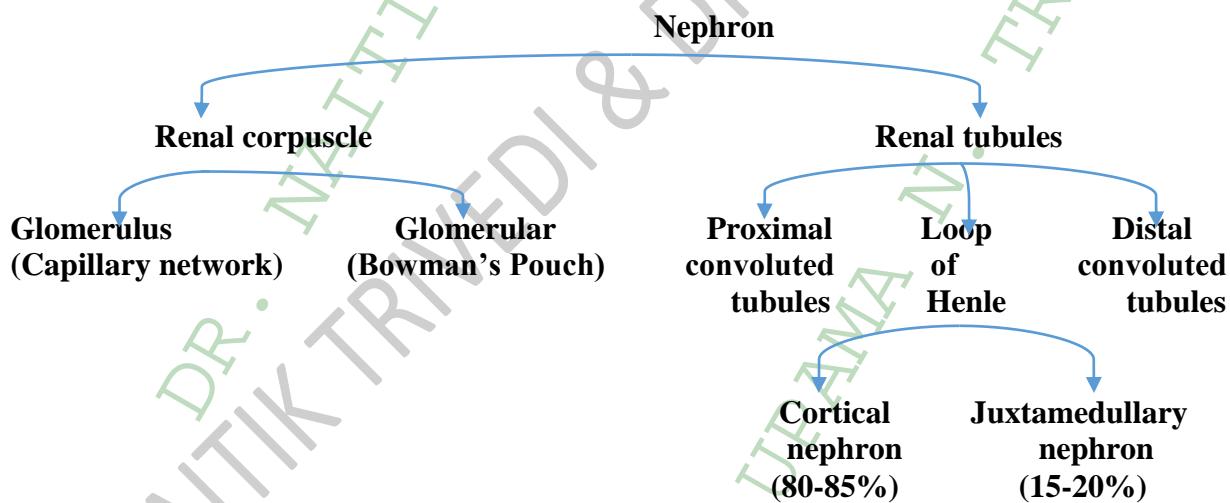
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### 5. Histology and path of urine.



### 6. Define nephron. Classify their parts.

- The functional unit of the kidney useful for the filtration of blood and formation of urine.



### 7. Give the location of kidney in human body.

- The kidneys lie in the retroperitoneal space behind the abdomen

### 8. State the 5 disorder of kidney.

- Chronic kidney disease.
- Kidney stones
- Glomerulonephritis
- Polycystic kidney disease
- Urinary tract infections

### 9. State the normal capacity of urinary bladder.

- The normal capacity of the bladder is 400-600 mL.

## B.PHARM SEM – II SHORT QUESTION AND ANSWER

### 10. Give the 2 functions urinary bladder.

- Stores urine,
- Allowing urination to be infrequent and controlled.

### 11. Name the 2 internal portion of the kidney.

- Cortex & Medulla

### 12. Name the 3 general processes involve in the urine formation.

- Glomerular filtration
- Renal reabsorption
- Renal secretion

### 13. Where the tubular secretion does takes place?

- Tubular secretion occurs in the proximal part of the nephron and the descending limb of the loop of Henle.

### 14. What effect does ADH has on urine volume or concentration?

- Decreases urine volume and increases urine concentration

### 15. What is net filtration pressure?

The net filtration pressure (NFP) is mainly describe by following three mechanism, in which one process promote the filtration and two oppose the filtration process.

#### • Glomerular Blood Hydrostatic Pressure (GBHP):

Afferent arteries have the larger diameter and efferent arteries have smaller diameter so large amount of blood comes into the glomerulus and small amount of blood out from the glomerulus it create pressure into the glomerulus that is 55 MmHg. Which is positive and it promote the filtration.

#### • Capsular Hydrostatic Pressure (CHP):

The wall of the capsule where there is no pores as well as the fluid filled into the capsule oppose the filtrate for filtration. This is the negative pressure which oppose the filtration rate that is 15 MmHg.

#### • Blood Colloidal Osmotic Pressure (BCOP):

Some of the protein of blood plasma cannot pass through the endothelial capsular membrane and it block the pore for filtration site, so it oppose the filtration rate and the pressure created by this oppose is 30 MmHg which is also the negative pressure.

#### NET FILTRATION PRESSURE (NFP)

$$\begin{aligned} \text{NFP} &= \text{GBHP} - \text{CHP} - \text{BCOP} \\ &= 55 \text{ mm Hg} - 15 \text{ mm Hg} - 30 \text{ mm Hg} \\ &= 10 \text{ mm Hg} \end{aligned}$$

### 16. Each kidney consist how many number of nephron.

Each kidney consist 1 million number of nephron

### 17. State how much amount of urine is filtered in each day.

- 180 L

**CHAPTER 4**

**ENDOCRINE SYSTEM**

**1. What is hormone?**

- Hormones are the chemical messengers which are secreted by the ductless glands called endocrine glands.
- These glands are controlled by the endocrine system.
- Hormones are released by specialized cells of the endocrine glands and act on distantly located target cells. A single hormone can contribute many functions and sometimes many hormones can perform a single function.

**2. Introduce endocrine gland**

- Endocrine glands are called ductless glands.
- They secrete their products directly into the bloodstreams and circulate in the body.

**3. Hypothalamus and thalamus are the endocrine gland?**

- Hypothalamus and thymus are not classified as an endocrine gland, but included in the endocrine system as they involve in the secretion of hormones.

**4. Chemically hormone is divided in how many types?**

- Chemically, hormone can be divided into two categories, i.e., lipid soluble and water soluble hormones.

**5. What is the precursor of steroid hormone?**

- Cholesterol acts as a precursor of steroid hormone. DHEA is a natural steroid hormone which is synthesized from cholesterol.

**6. Name the fat soluble hormone.**

- Thyroid is a lipid soluble hormone while amine, peptide, and protein hormones are water soluble, ranging from size 3 to over 200 amino acids.

**7. Which hormone is synthesized from histidine amino acid?**

- Epinephrine, norepinephrine, and dopamine are amine hormones, which are synthesized by modifying amino acid tyrosine.

**8. Name the protein hormone.**

- Insulin and human growth hormones are protein hormone while oxytocin and antidiuretic hormones are peptide hormones. TSH or thyroid stimulating hormone has carbohydrate attached to the protein so it comes under glycoprotein hormone.

**9. Which gland release neurohormone?**

- Hypothalamus release the neurohormone.
- Neurohormone are those which changes their function according to their requirements like they can be releasing hormones or inhibiting hormone.

## B.PHARM SEM – II SHORT QUESTION AND ANSWER

### 10. Name the hormone which takes part in the release of FSH and LH from the anterior pituitary.

- GnRH is Gonadotropin Releasing Hormone, which is responsible for the release of follicle stimulating hormone (FSH), and luteinizing hormone (LH).

### 11. Which hormone is Growth hormone inhibiting hormone?

- Somatostatin works against the growth hormone (GHRH), so it is known as growth inhibiting hormone.
- It consists of two peptides of 14 and 28 amino acids and is released from neurosecretory nerves.

### 12. What is the effect of dopamine hormone?

- Dopamine is prolactin inhibiting hormone (PIH), which inhibit the release of prolactin from the anterior pituitary.
- It also functions as a neurotransmitter

### 13. Which hormone is release by posterior pituitary gland?

- Oxytocin and vasopressin are released by the posterior pituitary. Posterior pituitary does not synthesize hormones, but it can store and release these two hormones.

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**CHAPTER 5**

**REPRODUCTIVE SYSTEM**

**1. Define reproductive system.**

- The reproductive system or genital system is a system of organs within an organism which work together for the purpose of reproduction.
- Reproduction is the process by which new individuals of species are produced via which genetic material pass from generation to generation.

**2. Enlist the organs of male reproductive system.**

- Penis, scrotum, testes, epididymis, vas deferens, prostate, and seminal vesicles.

**3. Which muscles produce wrinkle like structure on scrotum.**

- Dartos muscles

**4. Which cell produce sperm in male reproductive system.**

- Seminiferous tubule consist spermatogenic cell is taking part in the production of sperm cell, the process is known as spermatogenesis.

**5. How many number of sperm produce by healthy male in each day.**

- Each day healthy male produce 300 million sperm

**6. Explain the types of urethra in male reproductive system.**

There are three types of urethra in male reproductive system

- **The prostate urethra:** 2 – 3 cm long, passage from prostate gland.
- **The membranous urethra:** 1 cm in length
- **Spongy urethra:** 15-20 cm long.

**7. What is the Ph of semen?**

Ph of semen is alkaline that is 7.2 to 7.7

**8. Enlist the accessory sex gland of male reproductive system**

Male reproductive system consists below accessory sex glands

- Seminal vesicles
- Prostate gland and
- Bulbourethral gland

**9. What is the meaning of infertile male ?**

- Normally semen consist 50 to 150 million number of sperm per mL of semen but when the sperm count decrease below the 20 million per mL in sperm that male is known as infertile male.

**10. What is the difference between infertile and impotent male?**

- Infertile male have less number of sperm but penis erection is normal
- Impotent male have normal amount of sperm but erection of penis not occur

## B.PHARM SEM – II SHORT QUESTION AND ANSWER

### 11. State the 2 function of testis

- Sperm production, secretion of testosterone

### 12. State the 2 function of leydig cells.

- Function of Leydig cells is to produce the androgen, testosterone, under the pulsatile control of pituitary luteinizing hormone (LH)

### 13. State the 2 function of scrotum.

- It contains the testicles (also called testes), as well as many nerves and blood vessels.
- The scrotum has a protective function and acts as a climate control system for the testes. For normal sperm development, the testes must be at a temperature slightly cooler (3oC lower than normal body temperature) than the body temperature

### 14. Give the functions of seminal vesicles, bulbourethral gland and prostate gland.

- The prostate gland, the seminal vesicles, and the bulbourethral glands contribute seminal fluid to semen, which carries and protects the sperm.

### 15. Give the composition of semen.

- Fluid from the seminal vesicles accounts for approximately 70% of semen volume. The seminal vesicles are the source of fructose in semen. Fructose is used by the spermatozoa as an energy source.
- The prostate gland supplies about 20% of the volume of semen. Its fluids include acid phosphatase and proteolytic enzymes that lead to coagulation and subsequent liquefaction of semen. The prostate also contains most of the IgA found in semen.
- The bulbourethral gland produces mucoproteins that make up about 5% of the volume of semen.

### 16. What are the basic functions of female reproductive system?

- Its functions include producing female gametes called eggs,
- Secreting female sex hormones (such as estrogen),
- Providing a site for fertilization,
- Gestating a fetus if fertilization occurs,
- Giving birth to a baby, and
- Breastfeeding a baby after birth.

### 17. Enlist the parts of female reproductive system?

- Internal reproductive organs
  - Vagina, uterus, fallopian tubes, cervix, and ovary.
- External reproductive organs
  - The mons pubis, pudendal cleft, labia majora and minora, vulva, Bartholin's gland, and the clitoris.

### 18. State the 2 layer of ovary.

- Germinal epithelium & Tunica albuginea

### 19. Name the 3 layers of uterus.

A. Perimetrium –

It is a thin covering on the outside of the uterus. It is actually part of the peritoneum.

B. Myometrium –

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Consists of three layers of smooth muscle. Longitudinal, circular, and spiral.

### C. Endometrium –

Is the inner mucosal lining. It consists of two layers:

1. Stratum functionale - contains secretory glands. This is the portion that is shed during Menses.
2. Stratum basale - is a highly vascularized layer which serves to regenerate the stratum functionale.

### 20. Name the hormones secreted by ovary.

- Estrogen - continues uterine wall development
- Progesterone - stimulates and maintains the uterine wall.

### 21. State the 2 roles of corpus luteum.

- It is essential for establishing and maintaining pregnancy in females.
- Secretes progesterone, which is a steroid hormone responsible for the development of the endometrium and maintenance, respectively.

### 22. State the different parts of ovarian tube.

- i. Isthmus:- The first segment, closest to the uterus.
- ii. Ampulla:- The second segment, more dilated & common site for fertilization.
- iii. Infundibulum:- The final segment, located farthest from the uterus.

### 23. What are the phases of menstrual cycle?

The duration of the female reproductive cycle is 24 – 35 days.

Menstrual cycle is divided in to three phases:

- i) Menstrual Phase    ii) Preovulatory Phase    iii) Postovulatory Phase

### 24. Memory gland present in which organ?

- Memory gland present in breast

### 25. Which hormone is responsible for the secretion of milk?

- Prolactin

### 26. Name the hormones regulating growth of female reproductive system.

- The hormones controlling the female reproductive system include
  - Produced in the brain
    - Gonadotropin-releasing hormone (GNRH),
    - Follicle-stimulating hormone (FSH) and
    - Leutinizing hormone (LH),
  - Produced by the ovaries
    - Oestrogen and progesterone

### 27. Enlist the different methods of contraception.

- Hormonal contraception, such the pill or the Depo Provera injection.
- Barrier methods, such as condoms.
- Surgical contraception
- Emergency contraception.

### 28. Enlist the different methods of surgical contraception. Explain hysterectomy.

- Vasectomy.
- Tubal ligation (tubes tied)

## B.PHARM SEM – II SHORT QUESTION AND ANSWER

- Hysteroscopic sterilization.
- Hysterectomy.
- A hysterectomy is an operation to remove a woman's uterus.

### 29. Condom is made up by which materials?

- Rubber latex

### 30. What is barrier method? Enlist the barrier methods of contraception.

- Barrier contraceptives are devices that attempt to prevent pregnancy by physically preventing sperm from entering the uterus.
- They include male condoms, female condoms, cervical caps, diaphragms, and contraceptive sponges with spermicide.

### 31. What is hCG?

- Human chorionic gonadotropin (**hCG**) is a hormone produced by the placenta after implantation.
- The presence of **hCG** is detected in some pregnancy tests (**HCG** pregnancy strip tests).

### 32. Why 1<sup>st</sup> morning urine sample taken for the pregnancy test?

- Because **first morning urine** typically contains the highest concentration of human chorionic gonadotropin (hcg), the **pregnancy** hormone.

### 33. What is spermatogenesis?

- Spermatogenesis is the process by which haploid spermatozoa develop from germ cells in the seminiferous tubules of the testis.
- This process starts with the mitotic division of the stem cells located close to the basement membrane of the tubules.

### 34. What is oogenesis?

- Oogenesis is the process of producing the female gametes, the Ovum, from the primordial germ cells.

### 35. What is DNA?

- DNA is a molecule composed of two chains that coil around each other to form a double helix carrying genetic instructions for the development, functioning, growth and reproduction of all known organisms and many viruses.

### 36. What is RNA?

- Ribonucleic acid (RNA) is a single strand polymeric molecule essential in various biological roles in coding, decoding, regulation and expression of genes.
- RNA and DNA are nucleic acids, and, along with lipids, proteins and carbohydrates, constitute the four major macromolecules essential for all known forms of life.