

## SOLUTION

### Section - A

1. (i) (a)
- (ii) (c)
- (iii) (d)
- (iv) (b)
- (v) (b)
- (vi) (b)
- (vii) (c)
- (viii) (c)
- (ix) (a)
- (x) (c)

### Section - B

2. (a) (i) Antidiuretic hormone :- It help in reabsorption of water
- (ii) Glomerules :- It serves as the first stage in the filtering process of the blood carried out by the nephron in its formation of urine.
- (iii) Medulla oblongata :- It control activities of internal organs, heart beat, breathing etc.
- (iv) In an embryo it produce RBCs.
- (v) Glucagon :- It increase the blood sugar level by converting glycogen (in muscle & liver) into glucose.
- (b) (i) Synapse :- It is the point of contact between the terminal branches of the axon of a neuron with the dendrites of another neuron separated by a fine gap.
- (ii) Power of accomodation :- The process of focusing the eye at different distances is called accommodation.
- (iii) Osmoregulation :- The kidney while removing wastes like urea from the blood also regulates its composition. This function is called osmoregulation.
- (iv) Pulse :- It is the alternate expansion & elastic recoil of the wall of the artery during ventricular systole.
- (v) Micturition :- The process of excreting urine from the urinary bladder.

3. (i) Reflex action :- An involuntary response on stimulation of the peripheral nervous system which requires the involvement of a part of the central nervous system is called reflex action.
- (ii) Synapse
- (iii) 1. Sensory neuron  
 2. Motor neuron  
 3. Grey mater
- (iv) The exterior surface of the brain is composed of many millions of neuron bodies, and the interior surface is made up of myelinated axons.  
 In the spinal cord, it is reverse, i.e. the exterior surface of the spinal cord is composed by myelinated axons and the interior surface is composed of neuron.
- (v) The three meninges protect the spinal cord from damage.  
 The cerebrospinal fluid protects the brain from damage.
4. (i) Nephron
- (ii) Glomerular filtrate
- (iii) Water and sodium ions are resabsorbed in the tubule
- (iv) Urine.  
 Urea is the main nitrogenous waste.
- (v) The steps are as follows : Ultrafiltration, Reabsorption and Secretion
- (vi) Glucose
5. (i) Pituitary gland  
 Location :- hangs from the base of the mid-brain below hypothalamus.
- (ii) It is popularly called the master gland because it control the secretion of other endocrine glands.
- (iii) Oxytocine & ADH secreted by posterior pituitary while ACTH & GH secreted by anterior pituitary.
- (b) (i)

Natural reflex	Conditioned reflex
It is one in which no previous experience or learning is required. eg.: (i) Blinking, coughing	It is one which develops during life time due to experience or learning. eg.: Playing a musical instrument.

(ii) During summer there is more water loss by evaporation as there is sweating. So, there is more reabsorption of water from the kidney tubules into the blood. That is why the urine becomes thicker in summer than in winter.

6. (a) (i) A = artery                      B = vein

- (ii) 1. endothelium  
 2. middle layer  
 3. external layer  
 4. endothelium  
 5. middle layer  
 6. external layer

(iii)

Artery	Vein
1. It carries blood away from the heart towards any organ.	1. It carries blood away from an organ towards the heart.
2. have narrow lumen	2. have a wider lumen

(b) (i) Ventricles are contracting in this phase. In the diagram given, tricuspid valves and bicuspid valves are closed, while the semi-lunar valve are open

- (ii) 1. Pulmonary artery  
 2. Aorta  
 3. Bicuspid valve  
 4. Semilunar valve

(iii) Oxygenated blood flows through '2' i.e. aorta.

(iv) '5' is pulmonary semilunar valve. It prevents the back flow of blood into the right ventricle at the time of ventricular diastole.