

### Assertion and Reason Type Questions

In each of the following questions two statements are given, one is Assertion (A) and other is Reason (R). For the (A) and (R) statements, mark the correct answer as—

- (a) If both **A** and **R** are true and **R** is the correct explanation of **A**
- (b) If both **A** and **R** are true and **R** is not the correct explanation of **A**
- (c) If **A** is true but **R** is false
- (d) If both **A** and **R** are false.

(1) **Assertion:** Veins have valves which away from the heart.

**Reason:** Veins distribute blood to the various parts of the body.

- (A)                      (B)                      (C)                      (D)

(2) **Assertion:** Biconcave form of human RBCs is advantageous in gas exchange.

**Reason:** A biconcave disc has 20-30% more surface area than a sphere.

- (A)                      (B)                      (C)                      (D)

- (3) **Assertion:** The S-A node acts as pacemaker.  
**Reason:** The S-A node is located in the wall of the right atrium near the interatrial septum.  
 (A) (B) (C) (D)
- (4) **Assertion:** Lymph capillaries are free and blind at one end.  
**Reason:** Lymph does not flow in a circular manner.  
 (A) (B) (C) (D)
- (5) **Assertion:** Lymphocytes arise from the stem cells present in the bone marrow and occur in the blood, lymph and connective tissues.  
**Reason:** Lymphocytes migrate to bursal lymphoid tissue or to thymus and differentiate into B or T cells.  
 (A) (B) (C) (D)
- (6) **Assertion:** Portal system consists of veins which carry blood to organs other than the heart.  
**Reason:** Vertebrates may have 2 or 3 portal systems, but hepatic portal system is present in all.  
 (A) (B) (C) (D)
- (7) **Assertion:** Prothrombin is essential for blood clotting.  
**Reason:** Prothrombin is synthesized in the liver in the presence of  $Ca^{++}$ .  
 (A) (B) (C) (D)
- (8) **Assertion:** The muscles fibres of SA node possess the lowest rhythmicity among all cardiac muscle fibres.  
**Reason:** Due to this fact, it can initiate excitory waves at the highest rate  
 (A) (B) (C) (D)
- (9) **Assertion:** Blood pressure is arterial blood pressure.  
**Reason:** It is measured by sphygmomanometer.  
 (A) (B) (C) (D) (AIIMS 2000)
- (10) **Assertion:** WBCs accumulate at the site of wounds by diapedesis.  
**Reason:** It is the squeezing of leucocytes from the endothelium.  
 (A) (B) (C) (D) (AIIMS 2000)
- (11) **Assertion:** Smaller the organism, higher is the rate of metabolism per gm. weight.  
**Reason:** Heart rate of six month old body is much higher than an old person.  
 (A) (B) (C) (D) (AIIMS 2003)