QB365 Question Paper Software
11th Standard - Biology
Chemical Coordination and Integration Assertion and reason

Exam Time: 00:20 Hrs | Date: 2025-10-10
Total Marks: 10

Questions:

Assertion and reason

1. **Assertion :** The person with diabetes insipidus feels thirsty.
Reason : A person with diabetes insipidus suffers from excess secretion of vasopressin.
Codes:
(a) If both Assertion and Reason are true and Reason is the correct explanation ofAssertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

2. **Assertion:** PTH is a hypercalcemic hormone.
Reason: It stimulates the process of bone resorption.
Codes:
(a) If both Assertion and Reason are true and Reason is the correct explanation ofAssertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

3. **Assertion:** Androgens stimulate muscular growth.
Reason: These produce anabolic effects on protein and carbohydrate metabolism.
Codes:
(a) If both Assertion and Reason are true and Reason is the correct explanation ofAssertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

4. **Assertion:** Failure of secretion of hormone vasopressin causes diabetes mellitus in the patient.
Reason: Vasopressin increases the volume of urine by increasing the reabsorption of water from the urine.
Codes:
(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

5. **Assertion (A):** Hormones are produced in tracer amounts.
Reason (R) : Hormones are non-nutrient chemicals
Codes:
a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) and (R) are false

6. **Assertion (A) :** Posterior pituitary is under the direct neural regulation of the hypothalamus.
Reason (R) : Oxytocin and vasopressin, which are actually synthesised by the hypothalamus and are transported axonally to neuro hypophysis
Codes:
a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) and (R) are false

7. **Assertion (A) :** Melatonin contributes to setting the body's biological clock.
Reason (R) : Melatonin is a hormone produced by neurosecretory cells of hypothalamus and stored and releasedbyneurohypophysis of pituitary gland.
Codes:
a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) and (R) are false

8. **Assertion (A):** Thyroid hormones are called calorigenic hormones.
Reason (R) : Thyroid hormones increase the use of cellular oxygen to produce ATP and use more ATP there by temperature of the body
Codes:
a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) and (R) are false

9. **Assertion (A):** Excessive amounts of calcitonin in the blood causes softening of the bones.
Reason (R): Calcitonin causes mobilisation of calcium from the bone to the blood plasma.
Codes:
a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) and (R) are false

10. **Assertion (A):** A woman at menopause age is likely to suffer from osteoporosis due to the decreased level of estrogen hormone.
Reason (R) : Estrogen hormone inhibit the osteoclast cells of bone tissue.
Codes:
a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)

c) (A) is true but (R) is false
d) Both (A) and (R) are false

Answers Key:

Assertion and reason

1. (c) If Assertion is true but Reason is false.
   Explanation:
   Vasopressin or antidiuretic hormone is secreted by posterior pituitary gland. The deficiency of vaopressin results in a disorder known as diabetes insipidus. The main symptoms of diabetes insipidus are increase in thirst and increase in urination.
2. (a) If both Assertion and Reason are true and Reason is the correct explanation ofAssertion.
   Explanation:
   Parathyroid hormone (PTH) increases the Ca2+ levels in the blood. PTH acts on bones and stimulates the process of bone resorption (dissolution/demineralisation).PTH also stimulates reabsorption of Ca2+ by the renal tubules and increases Ca2+ absorption from the digested food. It is, thus, clear that PTH is a hypercalcemic hormone, i.e., it increases the blood Ca2+ levels. Along with calcitonin, it plays a significant role in calcium balance in the body.
3. (a) If both Assertion and Reason are true and Reason is the correct explanation ofAssertion.
   Explanation:
   Androgens produce anabolic (synthetic) effects on protein an d carbohydrate metabolism. This anabolic effect causes greatly increased deposition of protein everywhere in the body, but especially in the muscles. Androgens, th erefore, stimulate muscular growth.
4. (d) If both Assertion and Reason are false.
   Explanation:
   Vasopressin or anti-diuretic hormone (ADH) reduces the volume of urine by increasing the reabsorption of water from the urine in the distal convoluted tubules, collecting tubules and collecting ducts in the kidney. It does so by rendering the walls of these tubules leads to diabetes insipidus (increased urination). Although the volume of urine is increased. No glucose appears in the urine of such patients. Diabetes mellitus is a disease which is caused due to the failure of insulin hormone secretion by the pancreatic islets. The osmotic effect of glucose in the urine considerably increases the volume of urine, due to which thirst is also enhanced. In extreme cases, the patient suffers from coma and may die.
5. b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
6. a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
7. c) (A) is true but (R) is false
8. a) Both (A) and (R) Are true and (R) is the correct explanation of (A)
9. d) Both (A) and (R) are false
10. a) Both (A) and (R) Are true and (R) is the correct explanation of (A)