QB365 Question Paper Software
12th Standard - Biology
Human Reproduction Assertion and reason

Exam Time: 00:20 Hrs | Date: 2025-09-27

Total Marks: 10

Questions:

1. **Assertion:** In human male, testis are extra abdominal and lie in scrotal sacs.
Reason : Scrotum acts as thermoregulator and keeps testicular temperature lower by 2°C for normal spermatogenesis.
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true butreason is false.
(d) Both assertion and reason are false.

2. **Assertion:** In mammals the female secondary sexual characters are developed by gonadotropins.
Reason: Gonadotropins are secreted by Graafian follicle.
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true butreason is false.
(d) Both assertion and reason are false.

3. **Assertion:** The endometrium undergoes cyclical changes during menstrual cycle.
Reason: The myometrium exhibits strong contractions during delivery of the baby.
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true butreason is false.
(d) Both assertion and reason are false.

4. In the given figure showing schematic representation of a menstrual cycle in human female. Refer to the three phases A, B, and C of menstrual cycle and comment upon the appropriateness of Assertion and Reason

Assertion (A) : Ovulation takes place during the end of phase C.
Reason (R) : The level of FSH is high during this period.
(a) If both A and R are true and R is the correct explanation of the A

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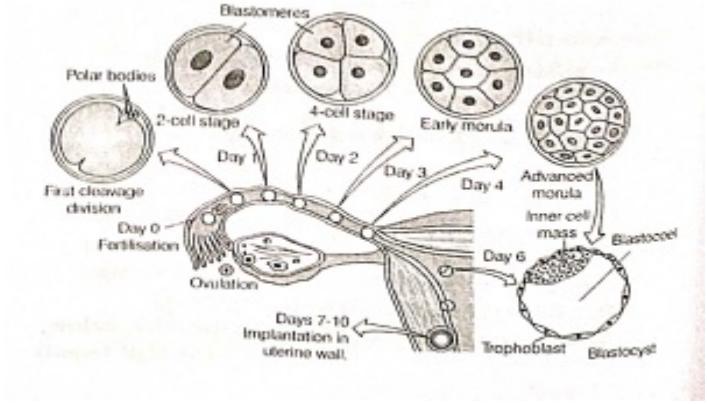
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

5.The diagram given below shows the event of cleavage. Refer to the diagram and comment upon the appropriateness of assertion and Reason.



Assertion (A) : During cleavage, the cells divide and continue to rise in number, but the mass of protoplasm remains same.
Reason (R) : With each consecutive subdivision there is approximately half the cytoplasm in each daughter cell.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

6.**Assertion. (A):** The anterior portion of the nucleus is covered by a cap - like structure called the acrosome.
Reason(R): The acrosome contains a large number of mitochondria which helps in the movement of the tail.
Codes:
A) Both (A) and (R) are truc 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) (A) is false but (R) is true

7.**Assertion (A):** The number of primary follicles are more during puberty than at the time of birth.
Reason (R): The follicles regenerate from birth to puberty.
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):** Placenta acts as an endocrine tissue.
Reason (R) : It produces hCG, hPL, estrogens, Androgens, aldosterone, progestogens and others.
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)

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

9. **Assertion (A):** The regions outside the seminiferous tubules are called interstitial spaces, which contain Leydig's cell.
Reason (R): Leydig's cells synthesise and secrete testicular hormones called androgens.
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):** Vigorous contraction of the uterus at the end of pregnancy causes expulsion.
Reason (R): The stimulatory reflex between the uterine contraction and oxytocin results in weakening contractions.
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

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Answers Key:

1. (a) : Scrotum is a place where testes begins to descend during the third month with a concomitant shortening of gubernaculum. Proper descend of testes is essential for complete fertility because sperms needs low temperature by about 2°C from normal body temperature (37°C) to mature. The scrotal sacs has dartos muscles which constantly contracts and relaxes the loose scrotal skin. The loose scrotal skin helps to keep the testicular temperature at 35°C. If the testes do not descend from the abdominal cavity to the scrotum, the high temperature will destroy the sperm producing seminiferous tubules which results in sterility. So, scrotum acts as a thermoregulator and helps in spermatogenesis.
2. (d): The female secondary sexual characters are developed by estrogen. Estrogens are steroid hormones secreted by growing ovarian follicles. This hormone is responsible for the development of female secondary sexual and accessory characters. In humans, it is also formed in the adrenal cortex, testis and fetoplacental unit.
Gonadotrophic hormones (LH and FSH) are secreted by the anterior lobe of pituitary gland. LH is responsible for ovulation and transforms Graafian follicle into corpus luteum and FSH stimulates spermatogenesis, maturation of Graafian follicle and secretion of estrogen in ovaries.
3. (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
4. (c) If A is true, but R is false
5. (b) If both A and R are true, but R is not the correct explanation of the A
6. C) (A) is true but (R) is false
7. d) Both (A) and (R) are false
8. c) (A) is true but (R) is false
9. b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
10. c) (A) is true but (R) is false