

**QB365 Question Paper Software**  
**12th Standard - Biology**

**Microbes in Human Welfare Assertion and reason**

Exam Time: 00:20 Hrs

Date: 2025-09-29

Total Marks: 10

**Questions:**

1. **Assertion:** Curdling is required in the manufacture of cheese.

**Reason:** Lactic acid bacteria and rennet is used for the purpose.

**Codes:**

- (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 but reason is false.
- (d) Both assertion and reason are false.

2. **Assertion (A):** Biogas is used as fuel for cooking and lighting.

**Reason (R):** It is considered as an ecofriendly and a pollution free source of energy.

**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) A is false, but R is true.

3. **Assertion :** Lichen is important for chemical industries.

**Reason :** Litmus and Orcein are formed from lichens.

**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.

4. **Assertion:** After 24 hours, toddy becomes unpalatable.

**Reason:** The fermentation of toddy is continued by naturally occurring yeasts.

**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:** Energy value of biogas is lower than that of organic matter.

**Reason:** Biogas minimises the chances of spread of fecal pathogens

**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.

6. **Assertion(A):** Sewage treatment is carried out in two stages.

**Reason(R):** The heterotrophic microbes that are naturally present in the sewage carry out the waste water treatment.

**Codes:**

1) Both (A) and (R) are true and (R) is the correct explanation of (A)

2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

3) (A) is true but (R) is false

4) Both (A) and (R) are false

7. **Assertion(A):** Some fungi are known to form symbiotic association with plants.

**Reason(R):** Many members of the genera Glomus form Mycorrhiza.

**Codes:**

1) Both (A) and (R) are true and (R) is the correct explanation of (A)

2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

3) (A) is true but (R) is false

4) Both (A) and (R) are false

8. **Assertion (A) :** Wine and beer are produced by distillation of the fermented broth.

**Reason (R) :** Different types of alcoholic drinks are obtained only by fermentation, always followed by the distillation process

**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. **Statement I :** Lactobacillus can convert milk into curd.

**Statement II :** During curd formation from milk  $\text{CO}_2$  is released.

**Codes:**

a) Both statements I and II are correct.

b) Statement I is correct but statement II incorrect.

c) Statement I is incorrect but statement II Correct.

d) Both statements I and II are incorrect.

10. **Assertion(A) :** BOD (Biological oxygen demand) is a device that is used to measure quality of water

**Reason(R) :** High BOD is observed in highly polluted water

**Codes:**

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true but R is not correct explanation of A

c) A is true but R is false

d) A and R are false

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## Answers Key:

1. (b) : The manufacture of cheese requires two main steps curdling and the ripening. Curdling the milk proteins forms a solid material from which the liquid is drained away. The curdling process may be exclusively microbiological, since acid production of lactic

acid bacteria is sufficient to coagulate milk proteins. However, an enzyme known as rennin (extracted from the stomachs of calves or rennet) which curdles milk is often used for this purpose.

2. Both A and R are true and R is not the correct explanation of A.
3. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

**Explanation:**

Litmus is an important and widely used dye in chemical laboratories as an acid-base indicator. It is obtained from *Rocella montaignei*. Orcein, a biological stain, is obtained from *Rocella tinctoria*.

4. (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

**Explanation:**

Toddy is a traditional drink of some parts of South India which is made by fermentation of sap of palms. Toddy left for few hours undergoes fermentation with the help of naturally occurring yeast to form beverage containing about 6% alcohol. But after about 24 hours, toddy becomes unpalatable because fermentation is carried on. At this time, it can be used for production of vinegar.

5. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

6. 2) Both (A) and (R) are true and (R) is not the correct explanation of (A)
7. 1) Both (A) and (R) are true and (R) is the correct explanation of (A)
8. d) Both (A) and (R) are false
9. b) Statement I is correct but statement II incorrect.
10. a) Both A and R are true and R is the correct explanation of A