

Chapter - 14

Statistics

(Assertion and Reasoning Questions)

In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
- (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
- (c) Assertion (A) is true but reason (R) is false.
- (d) Assertion (A) is false but reason (R) is true.

Q.1. Assertion (A): The arithmetic mean of the following given frequency distribution table is 13.81.

x	4	7	10	13	16	19
f	7	10	15	20	25	30

Reason (R):
$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$$

Q.2. Assertion (A): If the number of runs scored by 11 players of a cricket team of India are 5, 19, 42, 11, 50, 30, 21, 0, 52, 36, 27 then median is 30.

Reason (R): Median $= \left(\frac{n+1}{2}\right)^{\text{th}}$ value, if n is odd.

Q.3. Assertion (A): If the value of mode and mean is 60 and 66 respectively, then the value of median is 64.

Reason (R): Median = (mode + 2 mean)

-x-x-x-

ANSWER KEY

Q.1 : (a)

Both assertion and reason are true, reason is the correct explanation of the assertion.

Q.2 : (d)

Arranging the terms in ascending order, 0, 5, 11, 19, 21, 27, 30, 36, 42, 50, 52

$$\begin{aligned}\text{Median value} &= \left(\frac{11+1}{2}\right)^{\text{th}} \\ &= 6^{\text{th}} \text{ value} = 27\end{aligned}$$

Q.3 : (c)

$$\begin{aligned}\text{Median} &= \frac{1}{3}(\text{mode} + 2 \text{ mean}) \\ &= \frac{1}{3}(60 + 2 \times 66) = 64\end{aligned}$$