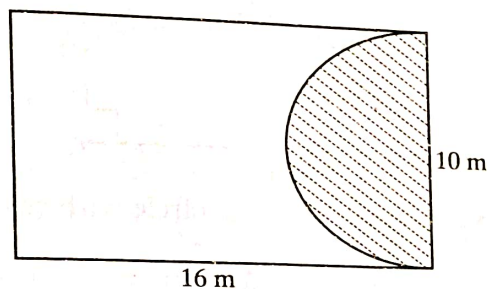


11. Given $\sin \theta = \frac{4}{a}$, then $\tan \theta$ is
 (a) $\frac{4}{\sqrt{a^2-16}}$ (b) $\frac{4}{a-2}$ (c) $\frac{\sqrt{a^2-4}}{4}$ (d) $\frac{2}{4}$
12. If $x = 3 \sec A$, $y = \tan A$, then $x^2 - 9y^2$ is equal to
 (a) 3 (b) -9 (c) -3 (d) 9
13. From the roof top of the house 15 m high, the angle of depression of a man walking towards house at a particular instant is 60° , the distance of man from house at that instant is
 (a) 45 m (b) $5\sqrt{3}$ m (c) 5 m (d) 9
14. If numerically the area of a circle is 4 times the perimeter of a circle, then radius of the circle is
 (a) 2 units (b) 4 units (c) 5 m (d) $15\sqrt{3}$ m
15. A circle of radius 12 cm is divided using 9 diametric lines into equal sectors, the area of one such sector is
 (a) $16\pi \text{ cm}^2$ (b) $32\pi \text{ cm}^2$ (c) $8\pi \text{ cm}^2$ (d) $16\pi \text{ cm}^2$
16. A rectangular park of length 16 m and breadth 10 m has a semicircular decorated portion along the breadth as shown. From the top of a house an object is thrown into the park, the probability that object will fall in decorated portion is



- (a) $\frac{55}{224}$ (b) $\frac{169}{224}$ (c) $\frac{55}{112}$ (d) $\frac{57}{112}$

17. While reshuffling the pack of cards, 3 cards of club were dropped out. From the remaining cards, a card is drawn at random, the probability that the card drawn is a red queen is
 (a) $\frac{4}{49}$ (b) $\frac{13}{49}$ (c) $\frac{26}{49}$ (d) $\frac{2}{49}$
18. The difference between upper limit of modal class and lower limit of median class for the given distribution is:

Class	0—10	10—20	20—30	30—40	40—50
Frequency	3	8	11	9	7

- (a) 9 (b) 25 (c) 10 (d) 5

Direction: In the question number 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R).

Choose the correct option.

- (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 and 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.

Section C consists of 6 questions of 3 marks each.

26. Three sets of English, Social Science and Hindi books have to be stacked in such a way that all the books are stored subject wise and number of books in each stack is the same. The number of English, Social Science and Hindi books are 192, 240 and 168 respectively. Find the number of stacks for English, Social Science and Hindi books.
27. If α, β are zeroes of a quadratic polynomial $3x^2 + 2x - 1$, find the value of
- (a) $\frac{\alpha^2}{\beta} + \frac{\beta^2}{\alpha}$ (b) $\alpha^2\beta + \alpha\beta^2$