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MCQs – Ch # 12: F.Sc Part 1

TEXT BOOK OF ALGEBRA AND TRIGONOMETRY CLASS XI

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Choose the correct answer.

1. A triangle which is not right is called
   (a) acute (b) obtuse (c) oblique (d) none of these
2. With usual notations $\frac{a}{\sin\alpha}=\frac{b}{\sin\beta}=\frac{c}{\sin\gamma}$ is called
   (a) law of sin (b) law of cosin (c) law of tangent (d) none of these
3. With usual notations $\frac{a-b}{a+b}=\frac{\tan\frac{\alpha-\beta}{2}}{\tan\frac{\alpha+\beta}{2}}$ is called
   (a) law of sin (b) law of cosin (c) law of tangent (d) none of these
4. The law of cosine is
   (a) $b^2=c^2+a^2-2ca\cos\beta$ (b) $b^2=c^2+a^2+2ca\cos\beta$
   (c) $b^2=c^2-a^2-2ca\cos\gamma$ (d) $b^2=c^2-a^2-2ca\cos\alpha$
5. If a,b,c are the measure of the sides of a triangle then
   (a) $s=a+b+c$ (b) $s=\frac{a+b+c}{2}$ (c) $s=\sqrt{a+b+c}$ (d) $s=\frac{a+b+c}{3}$
6. $\sin\frac{\alpha}{2}=$
   (a) $\sqrt{\frac{(s+b)(s+c)}{bc}}$ (b) $\sqrt{\frac{(s-b)(s-c)}{bc}}$ (c) $\sqrt{\frac{bc}{(s-b)(s-c)}}$ (d) $\sqrt{\frac{s(s-a)}{bc}}$
7. $\tan\frac{\alpha}{2}=$
   (a) $\sqrt{\frac{(s-b)(s-c)}{s(s+a)}}$ (b) $\sqrt{\frac{(s+b)(s+c)}{s(s-a)}}$ (c) $\sqrt{\frac{(s+b)(s+c)}{s(s+a)}}$ (d) $\sqrt{\frac{(s-b)(s-c)}{s(s-a)}}$
8. $\sin\frac{\beta}{2}=$
   (a) $\sqrt{\frac{(s+c)(s+a)}{ca}}$ (b) $\sqrt{\frac{(s-c)(s-a)}{ca}}$ (c) $\sqrt{\frac{ca}{(s-c)(s-a)}}$ (d) $\sqrt{\frac{s(s-b)}{bc}}$
9. $\cos\frac{\gamma}{2}=$
   (a) $\sqrt{\frac{(s-a)(s-b)}{ab}}$ (b) $\sqrt{\frac{(s+a)(s+b)}{ab}}$ (c) $\sqrt{\frac{s(s-c)}{ab}}$ (d) $\sqrt{\frac{s(s+c)}{ab}}$
10. Area of $\Delta ABC=$
    (a) $ab\sin\alpha$ (b) $\frac{1}{2}ab\sin\alpha$ (c) $\frac{1}{2}ac\sin\gamma$ (d) $\frac{1}{2}ac\sin\beta$
11. Area of $\Delta ABC=$
    (a) $\frac{a^2\sin\beta\sin\gamma}{2\sin\alpha}$ (b) $\frac{c^2\sin\alpha}{2\sin\beta\sin\gamma}$ (c) $\frac{b^2\sin\alpha}{2\sin\beta\sin\gamma}$ (d) $\frac{a^2\sin\beta\sin\gamma}{\sin\alpha}$

12. Area of ΔABC =
(a) $\sqrt{s(s+a)(s+b)(s+c)}$ (b) $\sqrt{s(s-a)(s-b)(s-c)}$
(c) $\sqrt{(s+a)(s+b)(s+c)}$ (d) $\sqrt{(s-a)(s-b)(s-c)}$

13. The angle AOP which the ray from an observer's eye at O to an object at P at the higher level makes with horizontal ray OA through O is called the…
(a) angle of depression (b) angle of elevation (c) acute angle (d) obtuse angle

14. The angle AOP which the ray from an observer's eye at O to an object at P at the lower level makes with horizontal ray OA through O is called the…
(a) angle of depression (b) angle of elevation (c) acute angle (d) obtuse angle

15. A circle passing through the vertices of any triangle is called
(a) in-circle (b) circum-circle (c) escribed-circle (d) none of these

16. A circle drawn in side the triangle and touching its sides is called
(a) in-circle (b) circum-circle (c) escribed-circle (d) none of these

17. A circle which touches one side of a triangle externally and the other two sides produced is calld
(a) in-circle (b) circum-circle (c) escribed-circle (d) none of these

18. Circum radius of ΔABC is
(a) $R=\frac{ab}{4\Delta}$ (b) $R=\frac{bc}{4\Delta}$ (c) $R=\frac{ac}{4\Delta}$ (d) $R=\frac{abc}{4\Delta}$

19. In-radius of the ΔABC is
(a) $r=\frac{\Delta}{s}$ (b) $r=\frac{abc}{4\Delta}$ (c) $r=\frac{\Delta}{s-b}$ (d) $r=\frac{abc}{4s}$

20. e-radius corresponding to $< B$ is
(a) $\frac{\Delta}{s}$ (b) $\frac{\Delta}{s-a}$ (c) $\frac{\Delta}{s-b}$ (d) $\frac{\Delta}{s-c}$

21. In ΔABC if $\alpha = 90^\circ$ the law of cosine reduces to
(a) $b^2+c^2=a^2$ (b) $c^2+a^2=b^2$ (c) $a^2+b^2=c^2$ (d) none of these

22. If you are looking a bird in the tree from the ground, then the angle formed is the
(a) angle of elevation (b) angle of depression (c) right angle (d) none of these

23. If you are looking some one on the ground from the top of a hill, the angle formed is the
(a) angle of elevation (b) angle of depression (c) right angle (d) none of these

24. Which of the following is Hero's formula
(a) $\Delta=\frac{1}{2}bc\sin\alpha$ (b) $\Delta=\frac{c^2\sin\alpha\sin\beta}{2\sin\gamma}$ (c) $\Delta=\frac{1}{2}bh$ (d) $\Delta=\sqrt{s(s-a)(s-b)(s-c)}$

25. Solve the right triangle ABC in which $\gamma=90^\circ, \alpha=37^\circ 20', a=243$ then $\beta=$
(a) 63° (b) $62^\circ 40'$ (c) $63^\circ 40'$ (d) 62°

26. Find the area of the triangle with the 3,4,5 units as measure of its sides
(a) 10 sq. units (b) 12 sq. units (c) 8 sq. units (d) none of these

27. When θ increase from 0° to 90° then $\tan\theta$
(a) increase (b) decrease (c) remain constant (d) none of these

28. $\operatorname{cosec}\frac{\alpha}{2}=$
(a) $\sqrt{\frac{(s-b)(s-c)}{bc}}$ (b) $\sqrt{\frac{bc}{(s-b)(s-c)}}$ (c) $\sqrt{\frac{s(s-a)}{(s-b)(s-c)}}$ (d) $\sqrt{\frac{ba}{(s-a)(s-b)}}$

29. $\sec\frac{\beta}{2}=$
(a) $\sqrt{\frac{s(s-b)}{ac}}$ (b) $\sqrt{\frac{(s-b)(s-c)}{bc}}$ (c) $\sqrt{\frac{s(s-c)}{ab}}$ (d) $\sqrt{\frac{ac}{s(s-b)}}$

30. $\cot\frac{\gamma}{2}=$

(a) $\sqrt{\frac{(s-a)(s-b)}{s(s-c)}}$ (b) $\sqrt{\frac{s(s-c)}{(s-a)(s-b)}}$ (c) $\sqrt{\frac{(s-a)(s-b)}{ab}}$ (d) $\sqrt{\frac{s(s-c)}{ab}}$

31. 31. If θ increase from 0° to 90° then $\sin\theta$

(a) increase (b) decrease (c) remain constant (d) none of these

32. If θ increase from 0° to 90° then $\cos\theta$

(a) increase (b) decrease (c) remain constant (d) none of these

33. When triangle is right then the cosines law reduces to

(a) sines law (b) tan law (c) pythagorus law (d) none of these

34. $\frac{a}{\sin\alpha}=\frac{b}{\sin\beta}=\frac{c}{\sin\gamma}=$

(a) r (b) $2r$ (c) R (d) $2R$

35. In equilateral triangle $r:R:r_1=$

(a) **1:2:3** (b) **3:2:1** (c) **2:3:1** (d) **2:1:3**

36. sines law is true for the triangle which is

(a) acute (b) right (c) oblique (d) all kinds

37. A vertical pole is 1 m high and the length of its shadow is 1 m then the angle of the elevation of the sun is

(a) 30° (b) 45° (c) 60° (d) 90°

38. A triangle can be constructed if

(a) one angle and one side is given (b) two sides are given

(c) two angles are given (d) none of these

39. $\frac{1}{r}=$

(a) $\frac{1}{r_1}+\frac{1}{r_2}$ (b) $\frac{1}{r_2}+\frac{1}{r_3}$ (c) $\frac{1}{r_1}+\frac{1}{r_2}+\frac{1}{r_3}$ (d) none of these

40. If the sides of the triangle ABC are 17, 10, 21 then $r_3=$

(a) $\frac{7}{2}$ (b) 12 (c) 6 (d) none of these

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