MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 78

Total Marks : 19

Max. Time : 20 min.

Topic : Solution of Triangle

Type of Questions		**M.M., Min.**
Single choice Objective (no negative marking) Q.1,2,3,4,5	**(3 marks, 3 min.)**	**[15, 15]**
Subjective Questions (no negative marking) Q.6	**(4 marks, 5 min.)**	**[4, 5]**

1. In a ΔABC, $A = \frac{2\pi}{3}$, $b - c = 3\sqrt{3}$ cm and area $(\Delta ABC) = \frac{9\sqrt{3}}{2}$ cm^2. Then 'a' is

(A) $6\sqrt{3}$ cm (B) 9 cm (C) 18 cm (D) none of these

2. In a ΔABC, if $\frac{s-a}{11} = \frac{s-b}{12} = \frac{s-c}{13}$, then $\tan^2\frac{A}{2}$ is equal to

(A) $\frac{143}{342}$ (B) $\frac{13}{33}$ (C) $\frac{11}{39}$ (D) $\frac{12}{37}$

3. If the sides a, b, c of a triangle ABC are the roots of the equation $x^3 - 13x^2 + 54x - 72 = 0$, then the value of $\frac{\cos A}{a} + \frac{\cos B}{b} + \frac{\cos C}{c}$ is equal to (with usual notation in ΔABC)

(A) $\frac{169}{144}$ (B) $\frac{61}{72}$ (C) $\frac{61}{144}$ (D) $\frac{169}{72}$

4. If p, q, r are the lengths of the internal bisectors of angles A, B, C of a ΔABC respectively, then

$\frac{1}{p}\cos\frac{A}{2} + \frac{1}{q}\cos\frac{B}{2} + \frac{1}{r}\cos\frac{C}{2} =$

(A) $\frac{1}{a} + \frac{1}{b} - \frac{1}{c}$ (B) $\frac{1}{a} + \frac{1}{c} - \frac{1}{b}$ (C) $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$ (D) $\frac{1}{b} + \frac{1}{c} - \frac{1}{a}$

5. The two adjacent sides of a cyclic quadrilateral are 2 and 5 and the angle between them is 60°. If the third side is 3, remaining fourth side is.

(A) 2 (B) 3 (C) 4 (D) 5

6. With usual rotation in ΔABC if $2b = 3a$ and $\tan^2 A = \frac{3}{5}$, prove that there are two values of third side, one of which is double the other.

Answers Key

1. (B) **2.** (B) **3.** (C) **4.** (C)

5. (A)