1. If $\sin A = \frac{1}{\sqrt{10}}$ and $\sin B = \frac{1}{\sqrt{5}}$, where A and B are positive acute angles, then $A+B=$ **[MP PET 1986]**

(a) π (b) $\pi/2$

(c) $\pi/3$ (d) $\pi/4$

2. If $\tan A = 2\tan B + \cot B$, then $2\tan(A-B) =$

(a) $\tan B$ (b) $2\tan B$

(c) $\cot B$ (d) $2\cot B$

3. If $\sin A + \sin B = C, \cos A + \cos B = D$, then the value of $\sin(A+B) =$ **[MP PET 1986]**

(a) CD (b) $\frac{CD}{C^2+D^2}$

(c) $\frac{C^2+D^2}{2CD}$ (d) $\frac{2CD}{C^2+D^2}$

4. If $\sin A = \sin B$ and $\cos A = \cos B$, then **[EAMCET 1994]**

(a) $\sin\frac{A-B}{2}=0$ (b) $\sin\frac{A+B}{2}=0$

(c) $\cos\frac{A-B}{2}=0$ (d) $\cos(A+B)=0$

5. $\sin 50^\circ - \sin 70^\circ + \sin 10^\circ =$ **[MNR 1979]**

(a) 1 (b) 0

(c) 1/2 (d) 2

6. $\cos^2 48^\circ - \sin^2 12^\circ =$ **[MNR 1977]**

(a) $\frac{\sqrt{5}-1}{4}$ (b) $\frac{\sqrt{5}+1}{8}$

(c) $\frac{\sqrt{3}-1}{4}$ (d) $\frac{\sqrt{3}+1}{2\sqrt{2}}$

7. If $y = (1+\tan A)(1-\tan B)$ where $A - B = \frac{\pi}{4}$, then $(y+1)^{y+1}$ is equal to **[J & K 2005]**

(a) 9 (b) 4

(c) 27 (d) 81

8. $\sin 75^\circ =$ **[MNR 1979]**

(a) $\frac{2-\sqrt{3}}{2}$ (b) $\frac{\sqrt{3}+1}{2\sqrt{2}}$

(c) $\frac{\sqrt{3}-1}{-2\sqrt{2}}$ (d) $\frac{\sqrt{3}-1}{2\sqrt{2}}$

9. If $\tan\alpha = \frac{m}{m+1}$ and $\tan\beta = \frac{1}{2m+1}$, then $\alpha+\beta =$ **[IIT 1978; EAMCET 1992; Roorkee 1998; JMI EEE 2001]**

(a) $\frac{\pi}{3}$ (b) $\frac{\pi}{4}$

(c) $\frac{\pi}{6}$ (d) None of these

10. $\tan 20^\circ + \tan 40^\circ + \sqrt{3}\tan 20^\circ \tan 40^\circ =$

(a) $\frac{1}{\sqrt{3}}$ (b) $\sqrt{3}$

(c) $-\frac{1}{\sqrt{3}}$ (d) $-\sqrt{3}$

11. $\frac{1}{4}\left[\sqrt{3}\cos 23^\circ - \sin 23^\circ\right] =$

(a) $\cos 43^\circ$ (b) $\cos 7^\circ$

(c) $\cos 53^\circ$ (d) None of these

12. $\tan 75^\circ - \cot 75^\circ =$ **[MNR 1982; Pb. CET 1990, 2000]**

(a) $2\sqrt{3}$ (b) $2+\sqrt{3}$

(c) $2-\sqrt{3}$ (d) None of these

13. If $\tan A = -\frac{1}{2}$ and $\tan B = -\frac{1}{3}$, then $A+B=$ **[IIT 1967; MNR 1987; MP PET 1989]**

(a) $\frac{\pi}{4}$ (b) $\frac{3\pi}{4}$

(c) $\frac{5\pi}{4}$ (d) None of these

14. If $A+B = 225^\circ$, then $\frac{\cot A}{1+\cot A}\cdot\frac{\cot B}{1+\cot B} =$ **[MNR 1974]**

(a) 1 (b) – 1

(c) 0 (d) 1/2

15. If $\sin A = \frac{4}{5}$ and $\cos B = -\frac{12}{13}$, where A and B lie in first and third quadrant respectively, then $\cos(A+B) =$

(a) $\frac{56}{65}$ (b) $-\frac{56}{65}$

(c) $\frac{16}{65}$ (d) – $\frac{16}{65}$

16. If $A+B = \frac{\pi}{4}$, then $(1+\tan A)(1+\tan B) =$

(a) 1 (b) 2

(c) ∞ (d) – 2

17. $\frac{1}{\sin 10^\circ} - \frac{\sqrt{3}}{\cos 10^\circ} =$ **[IIT 1974]**

(a) 0 (b) 1

(c) 2 (d) 4

18. If $\cos(A+B) = \alpha\cos A\cos B + \beta\sin A\sin B$, then (α,β) = **[MP PET 1992]**

(a) (– 1, – 1) (b) (– 1, 1)

(c) (1, – 1) (d) (1, 1)

19. $\frac{\sin^2 A - \sin^2 B}{\sin A\cos A - \sin B\cos B} =$ **[MP PET 1993]**

(a) $\tan(A-B)$ (b) $\tan(A+B)$

(c) $\cot(A-B)$ (d) $\cot(A+B)$

20. If $\cos(\alpha+\beta)=\frac{4}{5}, \sin(\alpha-\beta)=\frac{5}{13}$ and α,β lie between 0 and $\frac{\pi}{4}$, then $\tan 2\alpha =$ **[IIT 1979; EAMCET 2002]**

(a) $\frac{16}{63}$ (b) $\frac{56}{33}$

(c) $\frac{28}{33}$ (d) None of these

21. If $\cos\theta=\frac{8}{17}$ and θ lies in the 1st quadrant, then the value of $\cos(30°+\theta)+\cos(45°-\theta)+\cos(120°-\theta)$ is

(a) $\frac{23}{17}\left(\frac{\sqrt{3}-1}{2}+\frac{1}{\sqrt{2}}\right)$ (b) $\frac{23}{17}\left(\frac{\sqrt{3}+1}{2}+\frac{1}{\sqrt{2}}\right)$

(c) $\frac{23}{17}\left(\frac{\sqrt{3}-1}{2}-\frac{1}{\sqrt{2}}\right)$ (d) $\frac{23}{17}\left(\frac{\sqrt{3}+1}{2}-\frac{1}{\sqrt{2}}\right)$

22. If $\tan x+\tan\left(\frac{\pi}{3}+x\right)+\tan\left(\frac{2\pi}{3}+x\right)=3$, then

(a) $\tan x=1$ (b) $\tan 2x=1$

(c) $\tan 3x=1$ (d) None of these

23. The value of $\sin 47°+\sin 61°-\sin 11°-\sin 25°=$ **[MP PET 2001; EAMCET 2003]**

(a) $\sin 36°$ (b) $\cos 36°$

(c) $\sin 7°$ (d) $\cos 7°$

24. If $\sin(\theta+\alpha)=a$ and $\sin(\theta+\beta)=b$, then $\cos 2(\alpha-\beta)-4ab\cos(\alpha-\beta)$ is equal to

(a) $1-a^2-b^2$ (b) $1-2a^2-2b^2$

(c) $2+a^2+b^2$ (d) $2-a^2-b^2$

25. The expression $\cos^2(A-B)+\cos^2 B-2\cos(A-B)\cos A\cos B$ is

(a) Dependent on *B* (b) Dependent on *A* and *B*

(c) Dependent on *A* (d) Independent of *A* and *B*

26. The value of $\cos 15°-\sin 15°$ is equal to **[MNR 1975; MP PET 1994, 2002]**

(a) $\frac{1}{\sqrt{2}}$ (b) $\frac{1}{2}$

(c) $-\frac{1}{\sqrt{2}}$ (d) 0

27. If $\tan\alpha,\tan\beta$ are the roots of the equation $x^2+px+q=0\ (p\neq 0)$, then

(a) $\sin^2(\alpha+\beta)+p\sin(\alpha+\beta)\cos(\alpha+\beta)+q\cos^2(\alpha+\beta)=q$

(b) $\tan(\alpha+\beta)=\frac{p}{q-1}$

(c) $\cos(\alpha+\beta)=1-q$

(d) $\sin(\alpha+\beta)=-p$

28. $\tan 5x\tan 3x\tan 2x=$ **[EAMCET 1991]**

(a) $\tan 5x-\tan 3x-\tan 2x$ (b) $\frac{\sin 5x-\sin 3x-\sin 2x}{\cos 5x-\cos 3x-\cos 2x}$

(c) 0 (d) None of these

29. If $\tan\alpha$ equals the integral solution of the inequality $4x^2-16x+15<0$ and $\cos\beta$ equals to the slope of the bisector of first quadrant, then $\sin(\alpha+\beta)\sin(\alpha-\beta)$ is equal to **[Kerala (Engg.) 1993]**

(a) $\frac{3}{5}$ (b) $-\frac{3}{5}$

(c) $\frac{2}{\sqrt{5}}$ (d) $\frac{4}{5}$

30. $\tan\frac{2\pi}{5}-\tan\frac{\pi}{15}-\sqrt{3}\tan\frac{2\pi}{5}\tan\frac{\pi}{15}$ is equal to

(a) $-\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$

(c) 1 (d) $\sqrt{3}$

31. The value of $\cos 12°+\cos 84°+\cos 156°+\cos 132°$ is **[Kerala (Engg.) 1993]**

(a) $\frac{1}{2}$ (b) 1

(c) $-\frac{1}{2}$ (d) $\frac{1}{8}$

32. The value of $\cos 52°+\cos 68°+\cos 172°$ is **[MP PET 1997; Pb. CET 1995, 99]**

(a) 0 (b) 1

(c) 2 (d) $\frac{3}{2}$

33. $\frac{\cos 17°+\sin 17°}{\cos 17°-\sin 17°}=$ **[MP PET 1998]**

(a) $\tan 62°$ (b) $\tan 56°$

(c) $\tan 54°$ (d) $\tan 73°$

34. $\frac{\cos 9°+\sin 9°}{\cos 9°-\sin 9°}=$ **[EAMCET 1992; Kerala (Engg.) 2005]**

(a) $\tan 54°$ (b) $\tan 36°$

(c) $\tan 18°$ (d) None of these

35. $\frac{\sin 70°+\cos 40°}{\cos 70°+\sin 40°}=$ **[CET 1986; MP PET 1999]**

(a) 1 (b) $\frac{1}{\sqrt{3}}$

(c) $\sqrt{3}$ (d) $\frac{1}{2}$

36. If $\cos(A-B)=\frac{3}{5}$ and $\tan A\tan B=2$, then **[MP PET 1997]**

(a) $\cos A\cos B=\frac{1}{5}$ (b) $\sin A\sin B=-\frac{2}{5}$

(c) $\cos A\cos B=-\frac{1}{5}$ (d) $\sin A\sin B=-\frac{1}{5}$

37. $\tan 100^\circ+\tan 125^\circ+\tan 100^\circ\tan 125^\circ=$ **[DCE 1999]**

(a) 0 (b) 1/2

(c) -1 (d) 1

38. If $\frac{\pi}{2}<\alpha<\pi,\ \pi<\beta<\frac{3\pi}{2};\ \sin\alpha=\frac{15}{17}$ and $\tan\beta=\frac{12}{5}$, then the value of $\sin(\beta-\alpha)$ is **[Roorkee 2000]**

(a) $-171/221$ (b) $-21/221$

(c) 21/221 (d) 171/221

39. If $\cos x+\cos y+\cos\alpha=0$ and $\sin x+\sin y+\sin\alpha=0$, then $\cot\left(\frac{x+y}{2}\right)=$ **[Karnataka CET 2001]**

(a) $\sin\alpha$ (b) $\cos\alpha$

(c) $\cot\alpha$ (d) $\sin\left(\frac{x+y}{2}\right)$

40. If $\sin\theta+\sin 2\theta+\sin 3\theta=\sin\alpha$ and $\cos\theta+\cos 2\theta+\cos 3\theta=\cos\alpha$, then θ is equal to **[AMU 2001]**

(a) $\alpha/2$ (b) α

(c) 2α (d) $\alpha/6$

41. $\frac{\cos 10^o+\sin 10^o}{\cos 10^o-\sin 10^o}=$ **[MP PET 2002]**

(a) $\tan 55^o$ (b) $\cot 55^o$

(c) $-\tan 35^o$ (d) $-\cot 35^o$

42. If $\cos P=\frac{1}{7}$ and $\cos Q=\frac{13}{14}$, where *P* and *Q* both are acute angles. Then the value of $P-Q$ is **[Karnataka CET 2002]**

(a) 30^o (b) 60^o

(c) 45^o (d) 75^o

43. $\sec 50^o+\tan 50^o$ is equal to **[DCE 2002]**

(a) $\tan 20^o+\tan 50^o$ (b) $2\tan 20^o+\tan 50^o$

(c) $\tan 20^o+2\tan 50^o$ (d) $2\tan 20^o+2\tan 50^o$

44. If $\tan\alpha=(1+2^{-x})^{-1}$, $\tan\beta=(1+2^{x+1})^{-1}$, then $\alpha+\beta$ equals **[AMU 2002]**

(a) $\pi/6$ (b) $\pi/4$

(c) $\pi/3$ (d) $\pi/2$

45. The sum $S=\sin\theta+\sin 2\theta+....+\sin n\theta$, equals **[AMU 2002]**

(a) $\sin\frac{1}{2}(n+1)\theta\sin\frac{1}{2}n\theta/\sin\frac{\theta}{2}$

(b) $\cos\frac{1}{2}(n+1)\theta\sin\frac{1}{2}n\theta/\sin\frac{\theta}{2}$

(c) $\sin\frac{1}{2}(n+1)\theta\cos\frac{1}{2}n\theta/\sin\frac{\theta}{2}$

(d) $\cos\frac{1}{2}(n+1)\theta\cos\frac{1}{2}n\theta/\sin\frac{\theta}{2}$

46. The value of $\cot 70^o+4\cos 70^o$ is **[Orissa JEE 2003]**

(a) $\frac{1}{\sqrt{3}}$ (b) $\sqrt{3}$

(c) $2\sqrt{3}$ (d) $\frac{1}{2}$

47. The expression $2\cos\frac{\pi}{13}.\cos\frac{9\pi}{13}+\cos\frac{3\pi}{13}+\cos\frac{5\pi}{13}$ is equal to **[UPSEAT 2004]**

(a) -1 (b) 0

(c) 1 (d) None of these

48. If $\sin\theta=\frac{12}{13},(0<\theta<\frac{\pi}{2})$ and $\cos\phi=-\frac{3}{5},\left(\pi<\phi<\frac{3\pi}{2}\right)$. Then $\sin(\theta+\phi)$ will be **[Orissa JEE 2004]**

(a) $\frac{-56}{61}$ (b) $\frac{-56}{65}$

(c) $\frac{1}{65}$ (d) -56

49. If $\tan A-\tan B=x$ and $\cot B-\cot A=y$, then $\cot(A-B)=$

(a) $\frac{1}{x}+y$ (b) $\frac{1}{xy}$

(c) $\frac{1}{x}-\frac{1}{y}$ (d) $\frac{1}{x}+\frac{1}{y}$

50. $\sin 12^\circ\sin 48^\circ\sin 54^\circ=$ **[IIT 1982; Kerala (Engg.) 2001]**

(a) 1/16 (b) 1/32

(c) 1/8 (d) 1/4

51. $\cos\frac{\pi}{5}\cos\frac{2\pi}{5}\cos\frac{4\pi}{5}\cos\frac{8\pi}{5}=$

(a) 1/16 (b) 0

(c) $-1/8$ (d) $-1/16$

52. $\frac{\cos 12^\circ-\sin 12^\circ}{\cos 12^\circ+\sin 12^\circ}+\frac{\sin 147^\circ}{\cos 147^\circ}=$ **[MP PET 1991]**

(a) 1 (b) -1

(c) 0 (d) None of these

53. $\tan 20^\circ\tan 40^\circ\tan 60^\circ\tan 80^\circ=$ **[IIT 1974]**

(a) 1 (b) 2

(c) 3 (d) $\sqrt{3}/2$

54. $\cos 20^\circ \cos 40^\circ \cos 80^\circ =$ **[MP PET 1989]**

(a) 1/2 (b) 1/4

(c) 1/6 (d) 1/8

55. $\sin 36^\circ \sin 72^\circ \sin 108^\circ \sin 144^\circ =$ **[IIT 1965]**

(a) 1/4 (b) 1/16

(c) 3/4 (d) 5/16

56. If $\cos A = m\cos B$, then **[MNR 1990]**

(a) $\cot\frac{A+B}{2} = \frac{m+1}{m-1}\tan\frac{B-A}{2}$

(b) $\tan\frac{A+B}{2} = \frac{m+1}{m-1}\cot\frac{B-A}{2}$

(c) $\cot\frac{A+B}{2} = \frac{m+1}{m-1}\tan\frac{A-B}{2}$

(d) None of these

57. If $x = \cos 10^\circ \cos 20^\circ \cos 40^\circ$, then the value of x is **[Roorkee 1995]**

(a) $\frac{1}{4}\tan 10^\circ$ (b) $\frac{1}{8}\cot 10^\circ$

(c) $\frac{1}{8}\operatorname{cosec} 10^\circ$ (d) $\frac{1}{8}\sec 10^\circ$

58. $\sin 12^\circ \sin 24^\circ \sin 48^\circ \sin 84^\circ =$ **[EAMCET 1989]**

(a) $\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ$

(b) $\sin 20^\circ \sin 40^\circ \sin 60^\circ \sin 80^\circ$

(c) $\frac{3}{15}$

(d) None of these

59. $\tan 3A - \tan 2A - \tan A =$ **[MNR 1982; Pb. CET 1991]**

(a) $\tan 3A \tan 2A \tan A$

(b) $-\tan 3A \tan 2A \tan A$

(c) $\tan A \tan 2A - \tan 2A \tan 3A - \tan 3A \tan A$

(d) None of these

60. $\cos^2\left(\frac{\pi}{4}-\beta\right) - \sin^2\left(\alpha - \frac{\pi}{4}\right) =$

(a) $\sin(\alpha+\beta)\sin(\alpha-\beta)$ (b) $\cos(\alpha+\beta)\cos(\alpha-\beta)$

(c) $\sin(\alpha-\beta)\cos(\alpha+\beta)$ (d) $\sin(\alpha+\beta)\cos(\alpha-\beta)$

61. $\tan 9^\circ - \tan 27^\circ - \tan 63^\circ + \tan 81^\circ =$ **[Roorkee 1989]**

(a) 1/2 (b) 2

(c) 4 (d) 8

62. $\frac{\sin 3\theta + \sin 5\theta + \sin 7\theta + \sin 9\theta}{\cos 3\theta + \cos 5\theta + \cos 7\theta + \cos 9\theta} =$ **[Roorkee 1973]**

(a) $\tan 3\theta$ (b) $\cot 3\theta$

(c) $\tan 6\theta$ (d) $\cot 6\theta$

63. $\sin 163^\circ \cos 347^\circ + \sin 73^\circ \sin 167^\circ =$ **[MP PET 2000]**

(a) 0 (b) 1/2

(c) 1 (d) None of these

64. The value of $\sin 600^\circ \cos 330^\circ + \cos 120^\circ \sin 150^\circ$ is **[MP PET 1994]**

(a) -1 (b) 1

(c) $\frac{1}{\sqrt{2}}$ (d) $\frac{\sqrt{3}}{2}$

65. $\cos A + \cos(240^\circ + A) + \cos(240^\circ - A) =$ **[MP PET 1991]**

(a) $\cos A$ (b) 0

(c) $\sqrt{3}\sin A$ (d) $\sqrt{3}\cos A$

66. $\cos^2\left(\frac{\pi}{6}+\theta\right) - \sin^2\left(\frac{\pi}{6}-\theta\right) =$ **[EAMCET 2001]**

(a) $\frac{1}{2}\cos 2\theta$ (b) 0

(c) $-\frac{1}{2}\cos 2\theta$ (d) $\frac{1}{2}$

67. If $b\sin\alpha = a\sin(\alpha+2\beta)$, then $\frac{a+b}{a-b} =$

(a) $\frac{\tan\beta}{\tan(\alpha+\beta)}$ (b) $\frac{\cot\beta}{\cot(\alpha-\beta)}$

(c) $\frac{-\cot\beta}{\cot(\alpha+\beta)}$ (d) $\frac{\cot\beta}{\cot(\alpha+\beta)}$

68. $\frac{\sin(B+A)+\cos(B-A)}{\sin(B-A)+\cos(B+A)} =$ **[Roorkee 1970; IIT 1966]**

(a) $\frac{\cos B+\sin B}{\cos B-\sin B}$ (b) $\frac{\cos A+\sin A}{\cos A-\sin A}$

(c) $\frac{\cos A-\sin A}{\cos A+\sin A}$ (d) None of these

69. If $\frac{\sin(x+y)}{\sin(x-y)} = \frac{a+b}{a-b}$, then $\frac{\tan x}{\tan y}$ is equal to

(a) $\frac{b}{a}$ (b) $\frac{a}{b}$

(c) ab (d) None of these

70. If $\sin A + \sin 2A = x$ and $\cos A + \cos 2A = y$, then $(x^2+y^2)(x^2+y^2-3) =$

(a) $2y$ (b) y

(c) $3y$ (d) None of these

71. The expression $\frac{\cos 6x + 6\cos 4x + 15\cos 2x + 10}{\cos 5x + 5\cos 3x + 10\cos x}$ is equal to

(a) $\cos 2x$ (b) $2\cos x$

(c) $\cos^2 x$ (d) $1+\cos x$

72. $\cos\alpha.\sin(\beta-\gamma) + \cos\beta.\sin(\gamma-\alpha) + \cos\gamma.\sin(\alpha-\beta) =$ **[EAMCET 2003]**

(a) 0 (b) 1/2

(c) 1 (d) $4\cos\alpha\cos\beta\cos\gamma$

73. $\sin(\beta+\gamma-\alpha) + \sin(\gamma+\alpha-\beta) + \sin(\alpha+\beta-\gamma) - \sin(\alpha+\beta+\gamma) =$

(a) $2\sin\alpha\sin\beta\sin\gamma$ (b) $4\sin\alpha\sin\beta\sin\gamma$

(c) $\sin\alpha\sin\beta\sin\gamma$ (d) None of these

74. If $m\tan(\theta-30°)=n\tan(\theta+120°)$, then $\frac{m+n}{m-n}=$ **[IIT 1966]**

(a) $2\cos 2\theta$ (b) $\cos 2\theta$

(c) $2\sin 2\theta$ (d) $\sin 2\theta$

75. $2\cos x-\cos 3x-\cos 5x=$ **[Roorkee 1974]**

(a) $16\cos^3 x\sin^2 x$ (b) $16\sin^3 x\cos^2 x$

(c) $4\cos^3 x\sin^2 x$ (d) $4\sin^3 x\cos^2 x$

76. $1+\cos 2x+\cos 4x+\cos 6x=$ **[Roorkee 1974]**

(a) $2\cos x\cos 2x\cos 3x$ (b) $4\sin x\cos 2x\cos 3x$

(c) $4\cos x\cos 2x\cos 3x$ (d) None of these

77. If $\frac{\sin A-\sin C}{\cos C-\cos A}=\cot B$, then *A,B,C* are in

(a) A.P. (b) G.P.

(c) H.P. (d) None of these

78. $\cos\frac{2\pi}{15}\cos\frac{4\pi}{15}\cos\frac{8\pi}{15}\cos\frac{16\pi}{15}$ = **[IIT 1985]**

(a) 1/2 (b) 1/4

(c) 1/8 (d) 1/16

79. The value of $\cos^2\frac{\pi}{12}+\cos^2\frac{\pi}{4}+\cos^2\frac{5\pi}{12}$ is **[Karnataka CET 2002]**

(a) $\frac{3}{2}$ (b) $\frac{2}{3}$

(c) $\frac{3+\sqrt{3}}{2}$ (d) $\frac{2}{3+\sqrt{3}}$

80. The value of $\sin\frac{\pi}{16}\sin\frac{3\pi}{16}\sin\frac{5\pi}{16}\sin\frac{7\pi}{16}$ is **[MP PET 2004]**

(a) $\frac{1}{16}$ (b) $\frac{\sqrt{2}}{16}$

(c) $\frac{1}{8}$ (d) $\frac{\sqrt{2}}{8}$

81. $\cos^2 76°+\cos^2 16°-\cos 76°\cos 16°=$ **[EAMCET 2002]**

(a) – 1/4 (b) 1/2

(c) 0 (d) 3/4

82. $\cos\frac{\pi}{7}\cos\frac{2\pi}{7}\cos\frac{4\pi}{7}=$ **[MP PET 1998]**

(a) 0 (b) $\frac{1}{2}$

(c) $\frac{1}{4}$ (d) $-\frac{1}{8}$

83. The value of $\frac{\tan 70°-\tan 20°}{\tan 50°}=$ **[Karnataka CET 2003]**

(a) 1 (b) 2

(c) 3 (d) 0

84. $\cos^2\alpha+\cos^2(\alpha+120°)+\cos^2(\alpha-120°)$ is equal to **[MP PET 1993]**

(a) 3/2 (b) 1

(c) 1/2 (d) 0

85. The value of $\tan 20°+2\tan 50°-\tan 70°$ is equal to **[AMU 2005]**

(a) 1 (b) 0

(c) $\tan 50°$ (d) None of these

Trigonometrical ratios of sum and difference of two and three angles

1	d	2	c	3	d	4	a	5	b
6	b	7	c	8	b	9	b	10	b
11	d	12	a	13	b	14	d	15	d
16	b	17	d	18	c	19	b	20	b
21	a	22	c	23	d	24	b	25	c
26	a	27	a,b	28	a	29	d	30	d
31	c	32	a	33	a	34	a	35	c
36	a	37	d	38	d	39	c	70	a
41	a	42	b	43	c	44	b	45	a
46	b	47	b	48	b	49	d	50	c
51	d	52	c	53	c	54	d	55	d
56	a	57	b	58	a	59	a	60	d
61	c	62	c	63	b	64	a	65	b
66	a	67	c	68	b	69	b	70	a
71	b	72	a	73	b	74	a	75	a
76	c	77	a	78	d	79	a	80	b
81	d	82	d	83	b	84	a	85	b