CHAPTER NO 10 (HSSC – I)

1) *Distance between the points* $P_1(x_1, y_1)$ & $P_2(x_2, y_2)$ *is*:

A. $d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$ B. $d = \sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2}$

C. $d = \sqrt{(x_1 - x_2)^2 + (y_2 - y_1)^2}$ D. *All of these*

2) The distance of the point (x_1, y_1) from the origin is given by:

A. $\sqrt{x_1^2 + y_1^2}$ B. $\sqrt{(x_1 + y_1)^2}$ C. $\sqrt{x_1^2 - y_1^2}$ D. $x_1^2 - y_1^2$

3) Distance between the points A(3,8) & B(5,6) is :

A. $2\sqrt{2}$ B. 3 C. 4 D. $\sqrt{2}$

4) $\sin(-\beta) =$ _____

A. $sin\beta$ B. $-sin\beta$ C. $cos\beta$ D. $cos(-\beta)$

5) $\cos(-\alpha)$

A. $sin\alpha$ B. $-sin\alpha$ C. $-cos\alpha$ D. $cos\alpha$

6) $\tan(-\alpha) =$

A. $-tan\alpha$ B. $tan\alpha$ C. $cot\alpha$ D. $-cot\alpha$

7) $\tan\left(\frac{\theta-\emptyset}{2}\right) = ?$

A. $sin\left(\frac{\theta-\emptyset}{2}\right)$ B. $cos\left(\frac{\theta-\emptyset}{2}\right)$ C. $-tan\left(\frac{\emptyset-\theta}{2}\right)$ D. $2\sin(\theta - \emptyset)\cos(\theta - \emptyset)$

8) *The angle associated with angles of measure* θ *to a right angle or its multiple is called*_____

A. *Acute angle* B. *Quadrantal angle*

C. *Allied Angle* D. *None of these*

9) $90^0 \pm \theta,\ 180^0 \pm \theta,\ 270^0 \pm \theta, 360^0 \pm \theta$ *are called*:

A. Obtuse angles B. Supplementary angles

C. Allied angles D. Acute angles

10) The angles $90^o \pm \theta, 180^o \pm \theta, 270^o \pm \theta, 360^o \pm \theta$ *are the* _____*angle*.

A. Composite B. Half C. Quadrantal D. Allied

11) *Which is the allied angle*:

A. $90° + \theta$ B. $60° + \theta$ C. $45° + \theta$ D. $30° + \theta$

12) *The measure of* $\pi + \theta$ *or* $\frac{3\pi}{2} - \theta$ *lies in the* _____*quadrant*.

A. *I* B. *II* C. *III* D. *IV*

13) Co − ratio of cosine is

A. *sec* B. *sine* C. *cosec* D. *cos*

14) *The value of* $sin\ 7\pi$ *is equal to*:

A. 0 B. 1 C. -1 D. $\frac{1}{2}$

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15) $sin\ 540°\ is\ equal\ to$

A. 1 B. 0 C. $\frac{1}{\sqrt{2}}$ D. $\frac{\sqrt{3}}{2}$

16) $cos\ 315°\ is\ equal\ to$

A. 1 B. 0 C. $\frac{1}{\sqrt{2}}$ D. $\frac{\sqrt{3}}{2}$

17) The value of $\tan 225^{\circ} = ?$

A. 0 B. $\frac{1}{\sqrt{3}}$ C. 1 D. ∞

18) $The\ value\ of\ sin\ 420°\ is$:

A. $\frac{1}{2}$ B. $\frac{\sqrt{3}}{2}$ C. $-\frac{1}{2}$ D. $-\frac{\sqrt{3}}{2}$

19) $\sin(-300^{o}) =$

A. $-\frac{\sqrt{3}}{2}$ B. $\frac{\sqrt{3}}{2}$ C. $\frac{2}{\sqrt{3}}$ D. 0

20) $tan\ (-135)\ is\ equal\ to$

A. 1 B. 0 C. $\frac{1}{\sqrt{3}}$ D. -1

21) $sec(-300°)\ is\ equal\ to$

A. 1 B. 2 C. 0 D. -1

22) $\tan 135^{\circ}45' = ?$

A. $\tan 44^{\circ}\ 25'$ B. $-\tan 44^{\circ}\ 15'$

C. $\cot 44^{\circ}\ 25'$ D. $-\cot 44^{\circ}\ 25'$

23) $if\ \alpha, \beta, \gamma\ are\ the\ angles\ of\ \Delta ABC, then\ Sin(\alpha + \beta)\ is\ equal\ to$

A. $sin\ \gamma$ B. $-sin\ \gamma$ C. $cos\ \gamma$ D. $-\cos\gamma$

24) $if\ \alpha, \beta, \gamma\ are\ the\ angles\ of\ \Delta ABC, then\ cos(\alpha + \beta)\ is\ equal\ to$

A. $sin\ \gamma$ B. $-sin\ \gamma$ C. $cos\ \gamma$ D. $-cos\ \gamma$

25) $If\ \alpha, \beta, \gamma\ are\ the\ angles\ of\ a\ triangle\ than \tan(\alpha + \beta) + tan\gamma =$ _____

A. 0 B. 1 C. 2 D. $None\ of\ these$

26) $if\ \alpha, \beta, \gamma\ are\ the\ angles\ of\ \Delta ABC, then\ cos\ \frac{(\alpha+\beta)}{2} =$

A. $sin\frac{\gamma}{2}$ B. $-sin\frac{\pi}{2}$ C. $cos\ \frac{\pi}{2}$ D. $-cos\ \frac{\pi}{2}$

27) $\sin(\pi - \alpha) =$

A. $-cos\alpha$ B. $cos\alpha$ C. $-sin\alpha$ D. $sin\alpha$

28) $\sin(\pi + \theta) =$

A. $-\cos\theta$ B. $\sin\theta$ C. $\frac{-1}{cosec\ \theta}$ D. $\cos\theta$

29) $\sin(2\pi - \theta) =$

A. $sin\theta$ B. $-sin\theta$ C. $cos\theta$ D. $None\ of\ these$

30) $sin\ (2\pi + \theta)\ is\ equal\ to$

A. $sin\ \theta$ B. $cos\ \theta$ C. $-\ sin\ \theta$ D. $-\cos\theta$

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31) $cos\ (\pi - \theta)$ *is equal to*

A. $sin\ \theta$ B. $cos\ \theta$ C. $-\ sin\ \theta$ D. $-\ \cos\theta$

32) $cos\ (\pi + \theta)$ *is equal to*

A. $sin\ \theta$ B. $cos\ \theta$ C. $-\ sin\ \theta$ D. $-\ \cos\theta$

33) $cos\ (2\pi + \theta)$ *is equal to*

A. $sin\ \theta$ B. $cos\ \theta$ C. $-\ sin\ \theta$ D. $-\ \cos\theta$

34) *The value of* $cos\ (\alpha - 2\pi)$ *is equal to*:

A. $-cos\ \alpha$ B. $-\ sin\ \alpha$ C. $cos\alpha$ D. $sin\ \alpha$

35) $tan\ (\pi - \theta)$ *is equal to*

A. $tan\ \theta$ B. $-\ \cot\theta$ C. $-\ \tan\ \theta$ D. $\cot\theta$

36) $tan\ (\pi + \theta)$ *is equal to*

A. $tan\ \theta$ B. $-\ \cot\theta$ C. $-\ tan\ \theta$ D. $\cot\theta$

37) $tan\ (2\pi - \theta)$ *is equal to*

A. $tan\ \theta$ B. $cot\ \theta$ C. $-\ \tan\ \theta$ D. $-\ \cot\theta$

38) $\tan(2\pi + \theta) =$ _____

A. $cot\theta$ B. $-cot\theta$ C. $\frac{1}{cot\theta}$ D. $-\frac{1}{cot\theta}$

39) $sin\ (\frac{\pi}{2} - \theta)$ *is equal to*

A. $cos\ \theta$ B. $Sin\ \theta$ C. $-cos\ \theta$ D. $-sin\ \theta$

40) $sin(\frac{\pi}{2} + \theta)$ *is equal to*

A. $Cos\ \theta$ B. $Sin\ \theta$ C. $-\cos\ \theta$ D. $-\sin\ \theta$

41) $sin\ (\frac{3\pi}{2} - \theta)$ *is equal to*

A. $Sin\ \theta$ B. $cos\ \theta$ C. $\sin\ \theta$ D. $-\cos\ \theta$

42) $\sin\left(\frac{3\pi}{2} + \theta\right) =$

A. $cos\theta$ B. $-cos\theta$ C. $sin\theta$ D. $-sin\theta$

43) $cos\ (\frac{\pi}{2} - \theta)$ *is equal to*

A. $cos\ \theta$ B. $sin\ \theta$ C. $-\cos\ \theta$ D. $-\sin\ \theta$

44) $cos\ \ (\frac{\pi}{2} + \theta)$ *is equal to*

A. $cos\ \theta$ B. $sin\ \theta$ C. $-\cos\ \theta$ D. $-\sin\ \theta$

45) *Which of the following is equal to* $\cos(\frac{3\pi}{2} - x)$?

A. $-cosx$ B. $-sinx$ C. $sinx$ D. $cosx$

46) $\cos\left(\frac{3\pi}{2} - \theta\right) =$

A. $-cos\theta$ B. $cos\theta$ C. $sin\theta$ D. $\cos\left(\frac{\pi}{2} + \theta\right)$

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47) What is the value of $\cos\left(\frac{3\pi}{2}+\theta\right)$?

A. $cos\theta$ B. $sin\theta$ C. $-sin\theta$ D. $-cos\theta$

48) $tan\ (\frac{\pi}{2}-\theta)\ is\ equal\ to$

A. $cot\ \theta$ B. $tan\ \theta$ C. $-cot\ \theta$ D. –tan θ

49) $tan\ (\frac{\pi}{2}+\theta)\ is\ equal\ to$

A. $cot\ \theta$ B. $tan\ \theta$ C. $-cot\ \theta$ D. – tan θ

50) $\tan\left(\frac{3\pi}{2}-\theta\right)=$ _____

A. $-cot\theta$ B. $tan\theta$ C. $-tan\theta$ D. $cot\theta$

51) $\tan\left(\frac{3\pi}{2}-\theta\right)=$

A. $\tan\theta$ B. $-\cot\theta$ C. $\frac{1}{tan\ \theta}$ D. $-\tan\theta$

52) $\tan(270^0+\theta)\ is\ equal$:

A. $cot\theta$ B. $tan\theta$ C. $-cot\theta$ D. $-tan\theta$

53) $\cot(90^0-\alpha)equals$:

A. $-tan\alpha$ B. $tan\alpha$ C. $cot\alpha$ D. $-cot\alpha$

54) $\sec\left(\frac{3\pi}{2}-\theta\right)=$

A. $cosec\theta$ B. $-cosec\theta$ C. $-sec\theta$ D. $None\ of\ these$

55) $If\ \tan\theta>0, sin\theta>0, then\ the\ terminal\ arm\ of\ the\ angle\ lies\ in\ the\ quadrant$

A. I B. II C. III D. IV

56) $If\ sin\theta>0, cot\theta>0, then\ in\ which\ quadrant\ \theta\ lies$

A. I B. II C. III D. IV

57) $If\ cot\theta<0, cos\theta<0, then\ the\ terminal\ arm\ of\ the\ angle\ lies\ in\ the\ quadrant$

A. I B. II C. III D. IV

58) $If\ sin\theta<0, cos\theta<0, then\ terminal\ arm\ of\ angle\ lies\ in\ the\ quadrant$

A. I B. II C. III D. IV

59) $If\ tan\theta\ >0\ and\ if\ sin\theta<0, then\ the\ terminal\ arm\ of\ angle\ lies\ in\ the\ quadrant$:

A. I B. II C. III D. IV

60) $If\ sin\theta<0, cot\theta>0, then\ in\ which\ quadrant\ \theta\ lies$

A. I B. II C. III D. IV

61) $If\ sin\theta<0, cos\theta>0, then\ terminal\ arm\ of\ angle\ lies\ in\ the\ quadrant$

A. I B. II C. III D. IV

62) $If\ \tan\theta<0, sin\theta<0, then\ the\ terminal\ arm\ of\ the\ angle\ lies\ in\ the\ quadrant$

A. I B. II C. III D. IV

63) $If\ cot\theta<0, cos\theta>0, then\ the\ terminal\ arm\ of\ the\ angle\ lies\ in\ the\ quadrant$

A. I B. II C. III D. IV

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64) $sin\,(180+\alpha)\,sin\,(90-\alpha)$ *is equal to*

A. $sin\,\alpha\,cos\,\alpha$ B. $-sin\,\alpha\,cos\,\alpha$

C. $cos\,\gamma$ D. $-cos\,\gamma$

65) $\sin\left(\theta+\frac{\pi}{6}\right)+\cos\left(\theta+\frac{\pi}{3}\right)=$_____

A. $\cos\theta$ B. $\sin\theta$ C. $\sec\theta$ D. $\operatorname{cosec}\theta$

66) $cos(\alpha-\beta)$ *is equal to*

A. $cos\alpha cos\beta+sin\alpha sin\beta$ B. $cos\alpha cos\beta-sin\alpha sin\beta$

C. $sin\,\alpha\,cos\,\beta+cos\,\alpha\,sin\,\beta$ D. $sin\,\alpha\,cos\,\beta-cos\,\alpha\,sin\,\beta$

67) $cos(\alpha+\beta)$ *is equal to*

A. $cos\,\alpha\,cos\,\beta+sin\,\alpha\,sin\,\beta$ B. $cos\,\alpha\,cos\,\beta-sin\,\alpha\,sin\,\beta$

C. $sin\,\alpha\,cos\,\beta+cos\,\alpha\,sin\,\beta$ D. $sin\,\alpha\,cos\,\beta-cos\,\alpha\,sin\,\beta$

68) $sin\,(\alpha-\beta)$ *is equal to*

A. $cos\,\alpha\,cos\,\beta+sin\,\alpha\,sin\,\beta$ B. $cos\,\alpha\,cos\,\beta-sin\,\alpha\,sin\,\beta$

C. $sin\,\alpha\,cos\,\beta+cos\,\alpha\,sin\,\beta$ D. $sin\,\alpha\,cos\,\beta-cos\,\alpha\,sin\,\beta$

69) $sin\,(\alpha+\beta)$ *is equal to*

A. $cos\,\alpha\,cos\,\beta+sin\,\alpha\,sin\,\beta$ B. $cos\,\alpha\,cos\,\beta-sin\,\alpha\,sin\,\beta$

C. $sin\,\alpha\,cos\,\beta+cos\,\alpha\,sin\,\beta$ D. $sin\,\alpha\,cos\,\beta-cos\,\alpha\,sin\,\beta$

70) $\cos(\frac{\pi}{2}-\beta)$ *is equal to*

A. $Cos\,\beta$ B. $-cos\,\beta$

C. $sin\,\beta$ D. $-sin\,\beta$

71) $\cos\left(\beta+\frac{\pi}{2}\right)$ *is equal to*

A. $Cos\,\beta$ B. $-cos\,\beta$

C. $sin\,\beta$ D. $-sin\,\beta$

72) $sin\,(\beta-\frac{\pi}{2})$ is equal to

A. $Cos\,\beta$ B. $-cos\,\beta$

C. $sin\,\beta$ D. $-sin\,\beta$

73) Which one is not true?

A. $\cos(a-b)=\cos a\cos b+\sin a\sin b$ B. $\tan(a-b)=\frac{\tan\,a-\tan\,b}{1+\tan\,a\tan\,b}$

C. $\cot(a+b)=\frac{cot\;a\;cot\;b\;-1}{cot\;a+cot\;b}$ D. $\tan(270^{\circ}+\theta)=cot\theta$

74) Fundamental law is:

A. $\cos(a+b)=cos\,a\,cos\,b+sin\,a\,sin\,b$ B. $\cos(a-b)=cos\,a\,cos\,b+sin\,a\,sin\,b$

C. $\sin(a-b)=cos\,a\,cos\,b+sin\,a\,sin\,b$ D. $\sin(a-b)=sin\,a\,sin\,b+cos\,a\,cos\,b$

75) Which one is true?

I) $sin(\alpha+\beta)=\sin\alpha\cos\beta+\cos\alpha\sin\beta$ II) $\tan(\alpha-\beta)=\frac{\tan\alpha-\beta}{1-\tan\alpha\tan\beta}$

III) $\cos(\alpha-\beta)=\cos\alpha\cos\beta-\sin\alpha\sin\beta$

A. I only B. II & *III only* C. I & *II only* D. II only

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76) $\frac{\sin(\alpha+\beta)}{\cos\alpha\cos\beta}$ =?

A. $\tan\alpha+\tan\beta$ B. $\cos\alpha+\cos\beta$

C. $\cos(\alpha+\beta)$ D. $\sin\alpha+\sin\beta$

77) $Sin(\alpha+\beta)Sin(\alpha-\beta)$ =?

A. $Sin^2\alpha+Sin^2\beta$ B. $Cos^2\alpha-Cos^2\beta$

C. $Sin^2\beta-Sin^2\alpha$ D. $Cos^2\beta-Cos^2\alpha$

78) $\frac{\cos 11^0+\sin 11^0}{\cos 11^0-\sin 11^0}=$ _____

A. $\tan 11^o$ B. $\cot 11^o$ C. $\tan 56^o$ D. $\cot 56^o$

79) If $\cos\alpha=\frac{2}{7}$ and terminal ray α is in 2nd quadrant then $\sin\frac{\alpha}{2}$ =?

A. $\pm\frac{5}{2}$ B. $\sqrt{\frac{5}{14}}$ C. $\pm\frac{\sqrt{7}}{2}$ D. $\pm\frac{5}{\sqrt{2}}$

80) If $\sin\alpha=\frac{2}{3}$ and $\cos\beta=\frac{4}{5}$ where α,β are in first quadrant then $\sin(\alpha-\beta)$ =?

A. $\frac{15\sqrt{5}}{4}$ B. $\frac{8-3\sqrt{5}}{15}$ C. $16-\frac{11\sqrt{7}}{2}$ D. $7-\frac{5\sqrt{2}}{19}$

81) $\sin 15^\circ$ =?

A. $\frac{\sqrt{3}-1}{2\sqrt{2}}$ B. $\frac{\sqrt{3}+1}{2\sqrt{2}}$ C. $\frac{\sqrt{3}+1}{2}$ D. $\frac{\sqrt{3}-1}{2}$

82) $\tan(a+b)$ =?

A. $\frac{\tan a+\tan b}{1+\tan a\tan b}$ B. $\frac{\tan a-\tan b}{1+\tan a\tan b}$ C. $\frac{\tan a+\tan b}{1-\tan a\tan b}$ D. $\frac{\tan a-\tan b}{1-\tan a\tan b}$

83) $Tan(\propto-\beta)$ *is equal to*

A. $\frac{\tan\propto-\tan\beta}{1-\tan\alpha\tan\beta}$ B. $\frac{\tan\propto-\tan\beta}{1+\tan\alpha\tan\beta}$ C. $\frac{\tan\propto+\tan\beta}{1-\tan\alpha\tan\beta}$ D. $\frac{\tan\propto+\tan\beta}{1+\tan\alpha\tan\beta}$

84) $\tan(270^o+\theta)$ *is equal to*

A. $cot\theta$ B. $tan\theta$ C. $-cot\theta$ D. $-tan\theta$

85) If $\tan\alpha+\tan\beta=3$ and $\tan\alpha.\tan\beta=2$ then $\tan(\alpha+\beta)$ =?

A. 2 B. 3 C. -3 D. -2

86) *If* $r\cos\theta=7$ *and* $r\sin\theta=3$ *then* $r=$ _____

A. 9 B. $-\sqrt{58}$ C. $+\sqrt{58}$ D. 49

87) *What is the value of* r *if* $r\cos\emptyset=4$ *and* $r\sin\emptyset=-3$

A. -5 B. 25 C. ±5 D. 5

88) $sin2\alpha$ *is equal to*

A. $cos^2\alpha-Sin^2\alpha$ B. $1+cos^2 2\alpha$

C. $2sin\alpha\ cos\alpha$ D. $2sin2\alpha\ cos2\alpha$

89) $sin\theta$ *equals*

A. $2\sin\left(\frac{\theta}{2}\right)$ B. $\sin\left(\frac{\theta}{2}\right)\cos\left(\frac{\theta}{2}\right)$

C. $2\cos^2\left(\frac{\theta}{2}\right)$ D. $2\sin\left(\frac{\theta}{2}\right)\cos\left(\frac{\theta}{2}\right)$

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90) $2sinxcosx$ *is equal to* :

A. $sinx$ B. $sin2\,x$ C. $sin\frac{x}{2}\,cos\,\frac{x}{2}$ D. *none of these*

91) $\sin2\theta =$ _____

A. $\frac{1+\tan^2\theta}{1-\tan^2\theta}$ B. $\frac{2\tan\theta}{1-\tan^2\theta}$ C. $\frac{2\tan\theta}{1+\tan^2\theta}$ D. None of these

92) $cos2\alpha =$

A. $2sin^2\,\alpha - 1$ B. $2cos^2\,\alpha - 1$ C. $2\cos\frac{\alpha}{2}\sin\frac{\alpha}{2}$ D. *None of these*

93) Which one is false?

A. $\sin 2q = 2cosq\,sinq$ B. $\cos 2q = cos^2q - sin^2q$

C. $cos2q = sin^2q$ -1 D. $\tan 2q = \frac{2\tan\,q}{1-tan^2q}$

94) $cos\,a$ =?

I) $-cos^2\frac{a}{2} - sin^2\frac{a}{2}$ II) $2cos^2\frac{a}{2} - 1$ III) $1 - 2sin^2\frac{a}{2}$

A. I only B. II and III only C. I and II only D. all

95) $cos^2 2\theta =$

A. $4cos^3\theta - 3cos\theta$ B. $\frac{1+cos\,4\theta}{2}$

C. $4cos^2\theta sin^2\theta$ D. $cos2\theta$-sin2 θ

96) $\frac{1-\tan^2\theta}{1+\tan^2\theta}$ =?

A. $tan\,2\theta$ B. $cos\,2\,\theta$ C. $tan\theta$ D. $cos\,\theta$

97) $\frac{\sin\,2\alpha}{1-\cos\,2\alpha}$ =?

A. $sin\alpha$ B. $cot\alpha$ C. $cosec\alpha$ D. secα

98) $tan2\alpha =$

A. $\frac{2tan\alpha}{1-tan^2\alpha}$ B. $\frac{tan\alpha}{1+tan^2\alpha}$

C. $\frac{2tan\alpha}{1+tan^2\alpha}$ D. *None of these*

99) $\text{cosec}\,2\theta - \cot 2\theta$ =?

A. $tan2\theta$ B. $cot\,2\theta$ C. $Cot\,\theta$ D. $tan\,\theta$

100) $\cos^4 q - \sin^4 q$ =?

A. $cosec\,2q$ B. $sec\,2q$ C. $\frac{1}{sec\,2q}$ D. $\frac{1}{cos\,2q}$

101) $\sin\frac{\alpha}{2}$ is equals to

A. $\pm\sqrt{\frac{1+sin\alpha}{2}}$ B. $\pm\sqrt{\frac{1-cos\alpha}{2}}$ C. $\pm\sqrt{\frac{1+cos\alpha}{2}}$ D. $\pm\sqrt{\frac{1-sin\alpha}{2}}$

102) $cos\frac{\alpha}{2}$ *is equal to*:

A. $\frac{1+cos\alpha}{2}$ B. $\frac{1-cos\alpha}{2}$ C. $\frac{1+sin\alpha}{2}$ D. $\pm\sqrt{\frac{1+cos\alpha}{2}}$

103) $cos^2\theta =$ _____

A. $\frac{1+cos\theta}{2}$ B. $\frac{1+cos\,2\theta}{2}$ C. $\frac{1-cos\,2\theta}{2}$ D. $\frac{cos\,2\theta-1}{2}$

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104) $tan\frac{\alpha}{2}$ *is equal to*:

A. $\pm\sqrt{\frac{1-cos\alpha}{1+cos\alpha}}$ B. $\pm\sqrt{\frac{1+cos\alpha}{1-cos\alpha}}$ C. $\pm\sqrt{\frac{1-cos\alpha}{2}}$ D. $\pm\sqrt{\frac{1+cos\alpha}{2}}$

105) $\frac{1-\cos\alpha}{\sin\alpha} =$

A. $tan\ \frac{\alpha}{2}$ B. $cos\ \frac{\alpha}{2}$ C. $sin\ \frac{\alpha}{2}$ D. $sec\ \frac{\alpha}{2}$

106) $\sin 3\alpha =$

A. $2\sin\frac{3\alpha}{2}cos\frac{3\alpha}{2}$ B. $3sin\alpha\ cos\alpha$

C. $4cos^3\alpha - 3\ cos\alpha$ C. $sin^2\alpha - cos^2\alpha$

107) $\sin 3\alpha =$ _____

A. $4sin\alpha - 3sin^3\alpha$ B. $4cos^3\alpha - 3cos\ \alpha$

C. $3cos^3\alpha - 4cos\ \alpha$ D. $3sin\alpha - 4sin^3\ \alpha$

108) What is the value of sin9θ?

A. $4cos^3\theta - 3cos^3\theta$ B. $3cos^3 3\theta - 4cos3\theta$

C. $3sin3\theta - 4sin^3 3\theta$ D. $4sin3\theta - 3sin^3\theta$

109) $\cos 3\alpha =$ _____

A. $4sin^3\alpha - 3sin\alpha$ B. $2cos\frac{3\alpha}{2}sin\frac{3\alpha}{2}$

C. $cos^2\frac{3\alpha}{2} - sin^2\frac{3\alpha}{2}$ D. *None of these*

110) *Which of the following indentities is TRUE?*

A. $cos3\theta = 4cos^3\theta + 3cos\theta$ B. $cos3\theta = 4cos^3\theta - 3cos\theta$

C. $\sin 3\theta = 3sin\theta + 4sin^3\theta$ D. $sin3\theta = 4sin\theta + 3sin^3\theta$

111) *What is the value of* $tan3\theta$ *?*

A. $\frac{3tan\theta + tan^3\theta}{1+3tan^2\theta}$ B. $\frac{3tan\theta - tan^3\theta}{1-3tan^2\theta}$ C. $\frac{3tan\theta + tan^3\theta}{1-3tan\theta}$ D. $\frac{3tan\theta - tan^3\theta}{1+3tan\theta}$

112) $\cos^4\alpha$ when expressed in terms of trigonometric functions of multiples of α with exponent as unity equals to;

A. $\frac{1}{8}\{3 + 4\cos 2\alpha + \cos 4\alpha\}$ B. $\{3 + 4\cos 2\alpha + \cos 4\alpha\}$

C. $\frac{1}{6}\{3 + 4\cos 2\alpha + \cos 4\alpha\}$ D. $\frac{1}{6}\{5 + 4\ co(s\ 2\alpha + \cos 4\alpha\}$

113) $\frac{\sin 3\theta}{\sin\theta} - \frac{\cos 3\theta}{\cos\theta} = ?$

A. 0 B. $sin^2\theta$ C. $2tan\theta$ D. 2

114) $\frac{\cos^3\alpha - \sin^3\alpha}{\cos\alpha - \sin\alpha} = ?$

A. $1 + sin\alpha$ B. $1 - sin\alpha$ C. $\frac{2+\sin 2\alpha}{2}$ D. $\frac{1+\cos 2\alpha}{2}$

115) If $\tan\theta + \cot\theta = 2$ then $\tan^2\theta + \cot^2\theta = ?$

A. 1 B. 2 C. 3 D. 4

116) If $\sin\theta + cosec\theta = \sqrt{3}$ *then* $sin^3\theta + cosec^3\theta = ?$

A. 0 B. 1 C. 2 D. $3\sqrt{3}$

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117) The maximum value of $cos^2\theta - sin^2\theta =$?

A. 1 B. 2 C. 3 D. 0

118) Maximum value of $\cos x - \sin x =$?

A. 1 B. 0 C. $\sqrt{2}$ D. 2

119) When $\sin 3\theta \cos 5\theta$ is expressed as sum or difference, we get;

A. $\frac{1}{2}(\cos 2\theta - \sin 4\theta)$ B. $\frac{1}{2}(\sin 8\theta + \sin 2\theta)$

C. $\frac{1}{4}(\tan 2\theta - \sin 4\theta)$ D. $\frac{1}{2}(9\cos 2\theta - \cos 4\theta)$

120) $2sin7\theta\ cos3\theta =$

A. $sin10\theta + sin4\theta$ B. $sin5\theta + sin2\theta$

C. $cos10\theta + cos4\theta$ D. $cos5\theta - cos2\theta$

121) $2sin\alpha\ cos\beta =$

A. $\cos(\alpha+\beta) + cos(\alpha-\beta)$ B. $\cos(\alpha+\beta) - \cos(\alpha-\beta)$

C. $\sin(\alpha+\beta) + \sin(\alpha-\beta)$ D. $\sin(\alpha+\beta) - \sin(\alpha-\beta)$

122) $2cos5\theta sin3\theta =$

A. $sin8\theta - sin2\theta$ B. $sin8\theta + sin2\theta$

C. $\cos 8\theta + cos2\theta$ D. $sin4\theta - sin\theta$

123) $2cos5\ \theta\ sin3\ \theta$ *is equal to*

A. $sin8\theta + sin2\theta$ B. $sin8\theta + sin2\theta$

C. $sin4\theta - sin\theta$ D. $sin4\theta + sin\theta$

124) $2sin12^0 sin46^o =$

A. $cos34^o + cos58^o$ B. $sin34^o + sin58^o$

C. $sin34^o - sin58^o$ D. $cos34^o - cos58^o$

125) $sin\ 12°sin46°$ *is equal to*

A. $\frac{1}{2}(\cos 34° - cos58°)$ B. $\frac{1}{2}(cos\ 58° - cos34°)$

C. $(cos58° - cos34°)$ D. $\frac{1}{2}(cos\ 58° + cos34°)$

126) $\sin(a + b)\sin(a - b) =$?

A. $cos^2a - cos^2b$ B. $cos^2b - cos^2a$

C. $sin^2a + sin^2b$ D. $sin^2b - sin^2a$

127) $2sin7\theta\ sin2\theta$ *is equal to*

A. $cos5\theta - cos9\theta$ B. $cos9\theta - cos5\theta$

C. $sin9\theta + sin5\theta$ D. $sin9\theta + sin5\theta$

128) $\sin 12^\circ \sin 48^\circ \sin 54^\circ =$?

A. $\frac{1}{4}$ B. $\frac{1}{6}$ C. $\frac{1}{8}$ D. $\frac{1}{16}$

129) $\frac{\sin 9^\circ \sin 81^\circ}{\sin 48^\circ \sin 120^\circ} =$?

A. 0 B. -1 C. 1 D. 2

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130) $(\sin\alpha + \sin\beta)$ *is equal to*

A. $2\sin(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ B. $2\cos(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

C. $2\cos(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ D. $-2\sin(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

131) $\sin 3\theta - \sin 5\theta$ *equals*:

A. $2\sin 4\theta\cos 2\theta$ B. $2\sin 4\theta\sin\theta$

C. $-2\cos 4\theta\sin\theta$ D. $2\sin 4\theta\cos\theta$

132) $\sin\theta - \sin\emptyset = ?$

A. $2\cos\left(\frac{\theta+\emptyset}{2}\right)\sin\left(\frac{\theta-\emptyset}{2}\right)$ B. $2\sin\left(\frac{\theta+\emptyset}{2}\right)\cos\left(\frac{\theta-\emptyset}{2}\right)$

C. $2\cos\theta\sin\emptyset$ D. None

133) $\sin\alpha - \sin\beta$ *is equal to*

A. $2\sin(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ B. $2\cos(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

C. $2\cos(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ D. $-2\sin(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

134) $\sin(\alpha+\beta) - \sin(\alpha-\beta) =$ _____

A. $2\cos\alpha\sin\beta$ B. $2\sin\alpha\cos\beta$

C. $2\cos\alpha\cos\beta$ D. $-2\sin\alpha\sin\beta$

135) $\cos\alpha + \cos\beta = ?$

A. $2\cos\left(\frac{\alpha+\beta}{2}\right)\sin\left(\frac{\alpha-\beta}{2}\right)$ B. $2\cos\left(\frac{\alpha-\beta}{2}\right)\sin\left(\frac{\alpha-\beta}{2}\right)$

C. $2\cos\left(\frac{\alpha-\beta}{2}\right)\sin\left(\frac{\alpha+\beta}{2}\right)$ D. $2\cos\left(\frac{\alpha+\beta}{2}\right)\cos\left(\frac{\alpha-\beta}{2}\right)$

136) $\cos\frac{3\alpha}{4} + \cos\frac{4\alpha}{3}$ can be written in product form as

A. $2\sin 6\alpha\cos 2\alpha$ B. $2\sin\alpha\cos\alpha$

C. $2\cos\frac{25\alpha}{24}\cos\frac{7\alpha}{24}$ D. $2\cos\frac{52\alpha}{2}\cos\frac{5\alpha}{12}$

137) $\cos\alpha + \cos\beta$ *is equal to*

A. $2\sin(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ B. $2\cos(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

C. $2\cos(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ D. $-2\sin(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

138) *What will be the product form of* $\cos 7\theta - \cos\theta$

A. $-2\sin 4\theta\cos 3\theta$ B. $2\sin 4\theta\sin 3\theta$

C. $2\sin 3\theta\cos 4\theta$ D. $-2\sin 4\theta\sin 3\theta$

139) $\cos\alpha - \cos\beta =$

A. $2\sin(\frac{\alpha+\beta}{2})\cos(\frac{\alpha-\beta}{2})$ B. $2\cos(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

C. $2\cos\left(\frac{\alpha+\beta}{2}\right)\cos\left(\frac{\alpha-\beta}{2}\right)$ D. $-2\sin(\frac{\alpha+\beta}{2})\sin(\frac{\alpha-\beta}{2})$

140) $\cos(\alpha+\beta) - \cos(\alpha-\beta) =$

A. $2\sin\alpha\cos\beta$ B. $2\cos\alpha\sin\beta$

C. $2\cos\alpha\cos\beta$ D. $-2\sin\alpha\sin\beta$

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141) $\cos a - \cos b = ?$

A. $2\cos(a+b)\cos(a-b)$ B. $2\sin(a+b)\sin(a-b)$

C. $2\sin\left(\frac{a+b}{2}\right)\sin\left(\frac{a-b}{2}\right)$ D. $-2\sin\left(\frac{a+b}{2}\right)\sin\left(\frac{a-b}{2}\right)$

142) $\frac{\sin 30^\circ + \sin 60^\circ + \sin 90^\circ}{\cos 30^\circ + \cos 60^\circ + \cos 90^\circ} =$

A. $Tan\ 30^\circ$ B. $Tan\ 45^\circ$ C. $Tan\ 60^\circ$ D. $sin\ 0^\circ$

143) $\cos^2(45^\circ + x) - \sin^2(45^\circ - x) = ?$

A. 0 B. 1 C. -1 D. -2

144) $\sin\frac{\pi}{9}\sin\frac{2\pi}{9}\sin\frac{\pi}{3}\sin\frac{4\pi}{9} = ?$

A. $\frac{3}{4}$ B. $\frac{3}{5}$ C. $\frac{3}{17}$ D. $\frac{3}{16}$

145) $\cos\frac{\pi}{65}.\cos\frac{2\pi}{65}\cos\frac{3\pi}{65}\cos\frac{4\pi}{65}.\cos\frac{8\pi}{65}.\cos\frac{16\pi}{65}.\cos\frac{32\pi}{65} = ?$

A. $\frac{1}{16}$ B. $\frac{1}{32}$ C. $\frac{1}{48}$ D. $\frac{1}{64}$

146) $\tan 18^\circ + \tan 27^\circ + \tan 18^\circ.\tan 27^\circ = ?$

A. 1 B. -1 C. $\frac{\pi}{4}$ D. 3

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