CHAPTER NO 9 (HSSC – I)

(1) The common endpoint of two rays is called
A. Radian B. Degree C. Vertex D. None of these

(2) One degree is denoted by
A. 1 rad B. $1'$ C. $1''$ D. 1°

(3) 1^o = _____
A. $\frac{\pi}{180}$ radian B. $\frac{180}{\pi}$ radian C. $\frac{1}{180\pi}$ radian D. 180π radian

(4) $1^\circ \approx$
A. 1 radian B. 0.5 radian
C. 0.01745 radian D. 2.5 radian

(5) θ° is measured in
A. Circular System B. Sexagesimal System
C. MKS System D. CGS System

(6) $\frac{1}{4}$ rotation (anti − clockwise) =
A. 45° B. 90° C. 180° D. 360°

(7) 30° =
A. $\frac{\pi}{2}$ radians B. $\frac{\pi}{4}$ radians C. $\frac{\pi}{8}$ radians D. $\frac{\pi}{6}$ radians

(8) 45° =
A. $\frac{3\pi}{2}$ radians B. $\frac{2\pi}{3}$ radians C. $\frac{\pi}{4}$ radians D. 180π radians

(9) 120° =
A. $\frac{3\pi}{2}$ radians B. $\frac{2\pi}{3}$ radians C. $\frac{\pi}{2}$ radians D. 180π radians

(10) 150° =
A. $\frac{5\pi}{6}$ radians B. $\frac{2\pi}{3}$ radians C. $\frac{\pi}{4}$ radians D. 180π radians

(11) 105° =?
A. $\frac{7\pi}{12}$ radians B. $\frac{\pi}{3}$ radians C. $\frac{5\pi}{4}$ radians D. $\frac{11\pi}{6}$ radians

(12) 80° =
A. $\frac{5\pi}{6}$ radians B. $\frac{4\pi}{9}$ radians C. $\frac{\pi}{4}$ radians D. 180π radians

(13) $60'$ =?
A. 1" B. 60" C. 3600" D. 600"

(14) The 3600^{th} part of the degree is called_____
A. Degree B. Minute C. Second D. None

(15) $54^o 45'$ = _____radians
A. 0.956 B. 0.0175 C. 0.65 D. None of these

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(16) The central angle of an arc of a circle whose length is equal to the radius of the circle is called the
A. 1 Degree B. 1 Radian C. 1 Minute D. 1 Second

(17) π radians =
A. 360° B. $360'$ C. 180° D. $180'$

(18) 1 radian $\approx$
A. $57^\circ 17' 45''$ B. 1° C. 180° D. $180'$

(19) 3 radians is equal in degrees:
A. 169.78° B. 171.888° C. 170.889° D. 171.5°

(20) $\frac{3\pi}{2}$ radians equals:
A. 120° B. 150° C. 270° D. 190°

(21) $\frac{2\pi}{3}$ radians = _____
A. 120^o B. 270^o C. 190^o D. 145^o

(22) $\frac{5\pi}{4}$ radians
A. 360° B. 335° C. 270° D. 225°

(23) $\frac{7\pi}{12}$ =?
A. 95° B. 105° C. 115° D. 125°

(24) $\frac{\pi}{2}$ radians is an angle:
A. Acute B. Obtuse C. Straight D. Quadrantal

(25) Which one is true:
A. 1 radian $< 1^\circ$ B. 1 radian $> 1^\circ$
C. 1 radian $= 1^\circ$ D. 5 radian $= 2^\circ$

(26) The hour hand of a clock turns through _____radians in one hour.
A. $\frac{\pi}{3}$ B. $\frac{\pi}{8}$ C. $\frac{\pi}{4}$ D. $\frac{\pi}{6}$

(27) Circular measure of the angle between the hands of a watch at a $4'$ O clock is_____
A. $\frac{\pi}{6}$ radians B. $\frac{2\pi}{3}$ radians C. $\frac{3\pi}{4}$ radians D. $\frac{\pi}{3}$ radians

(28) Through how many radians does the minute hand of a clock turn in 20 minutes?
A. $\frac{\pi}{3}$ B. $\frac{\pi}{2}$ C. 2π D. $\frac{2\pi}{3}$

(29) If l and r are in cms, then the unit of θ is in
A. radians B. Degrees C. cm^2 D. None of these

(30) The radian measurement of the central angle of a circle of radius 6cm which cuts off an arc of 12cm long is:
A. 1 B. 2 C. 3 D. 4

(31) The radian measure of the angle at center of a circle, of radius 8cm which cuts off an arc 216cm long is
A. 15 radians B. 16.92 radians C. 27 radians D. 29.71 radians

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(32) The length of the arc cut off on a circle of radius 11cm by a central angle of 6π radians is

A. $\frac{6\pi}{11}$cm B. 66π cm C. $\frac{11\pi}{6}$cm D. 23π cm

(33) What is the Arc length if an arc subtends an angle $60^o\,20'$ with radius 18mm?

A. 18.95 B. 20.95 C. 25.95 D. 26.95

(34) When $\theta = \frac{\pi}{3}$ radians, $r = 6$m then area of sector =?

A. $\frac{3\pi}{7}\,m^2$ B. $6\pi\,m^2$ C. $19\frac{\pi}{2}\,m^2$ D. $\frac{13\pi}{11}\,m^2$

(35) The area of a sector with a central angle of 3.5 radians in a circuler region whose radius 8m is

A. $112\,m^2$ B. $66\,m^2$ C. $14\,m^2$ D. $70\,m^2$

(36) What is the measure of radius of the circle of which a sector has area of measure $\frac{\pi}{4}$ square units against the arc length of measure 2 ?

A. $\frac{\pi}{2}$ B. 2 C. $\frac{\pi}{4}$ D. π

(37) The ratio between the area of the sector to the length of arc of a circle is

A. $2r: 1$ B. $2: r$ C. $1: 2r$ D. $r: 2$

(38) A planet subtends an angle of 1.8° as observed from the earth. Its distance from the earth is 542300km, length of the diameter of the planet is.

A. 12340π km B. 27650π km C. $5721\,\pi$km D. 5423π km

(39) Direction of Qibla is found by using:

A. Plane geometry B. Spherical trigonometry
C. trigonometry D. All

(40) The vertex of an angle in standard form is at

A. $(1, 0)$ B. $(0, 1)$ C. $(1, 1)$ D. $(0, 0)$

(41) In the 2^{nd} quadrant cosØ is

A. $+ve$ B. $-ve$ C. both D. None

(42) $\sec(-216^\circ).\operatorname{cosec}(-15^\circ)$_____

A. < 0 B. > 0 C. < 1 D. > 1

(43) Sign of the $\cos(-885^0)$ is

A. $+ve$ B. $-ve$ C. 0 D. None

(44) Which one is true?

(I) $\sin(-\theta) = \sin\theta$ (II) $\cos(-\theta) = \cos\theta$ (III) $\tan(-\theta) = \tan\theta$

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

(45) $\cos^2\theta + \sin^2\theta =$

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

(46) $\cos^2\frac{\theta}{2} + \sin^2\frac{\theta}{2}$

A. $\frac{1}{4}$ B. $\frac{1}{2}$ C. 2 D. 1

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(47) $\sin^2 4A + \cos^2 4A =$

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

(48) $1 + \tan^2\theta$ is equal to

A. $\sec^2\theta$ B. $\operatorname{cosec}^2\theta$ C. $\cot^2\theta$ D. None of these

(49) $\sec^2\theta - \tan^2\theta =$

A. 1 B. 0 C. -1 D. $\cot^2\theta$

(50) $\tan^2\theta =$?

A. $\sec^2\theta - 1$ B. $1 - \sec^2\theta$ C. $\sec^2\theta + 1$ D. None

(51) $1 - \sec^2\theta =$ is equal to

A. $\tan^2\theta$ B. $-\tan^2\theta$ C. $\tan^2\theta - 1$ D. $1 - \tan^2\theta$

(52) $1 + \cot^2\theta =$

A. $\sec^2\theta$ B. $\frac{1}{\sin^2\theta}$ C. $\tan^2\theta$ D. $\frac{1}{\sec^2\theta}$

(53) $\csc^2\theta - \cot^2\theta =$

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

(54) $\cot^2\theta - \operatorname{cosec}^2\theta$ is equal to:

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

(55) What is the value of $\operatorname{cosec}^2 100^o - \cot^2 100^o$?

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

(56) All trigonometric function are positive in quadrant_____

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

(57) If $\sin\emptyset < 0$ and $\tan\emptyset > 0$ then terminal side lies in which quadrant

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

(58) $\cos\theta < 0$ *and* $\tan\theta < 0$ *lie in*_____*quadrant*.

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

(59) If $\cot\theta > 0$ *and* $\sin\theta < 0$, *then terminal arc of angle lies in quadrant*:

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

(60) If $\cot\theta < 0$ *and if* $\cos\theta > 0$, *then the termial arm of angle lies in the quadrant*:

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

(61) If $\sin\theta = \frac{1}{\sqrt{2}}$, then θ is

A. 60° B. 30° C. 180° D. 45°

(62) If $\cos\theta = \frac{1}{\sqrt{2}}$, then θ is equal to

A. 30° B. 45° C. 60° D. 90°

(63) If $\sin\theta = \frac{\sqrt{3}}{2}$, then θ is

A. 30° B. 45° C. 90° D. None of these

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(64) If $\tan\theta = a$ then $\sin\theta$ =?

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

(65) If $\cos\theta = \frac{12}{13}$ then $\tan\theta$ =?

A. $\frac{5}{12}$ B. $\frac{-5}{12}$ C. $\frac{12}{5}$ D. Both a and b

(66) If $\cos\theta = -\frac{\sqrt{3}}{2}$ and terminal side of the angle is not in 3rd quadrant $\sin\theta$ is_____

A. $-\frac{1}{2}$ B. $\frac{1}{2}$ C. $\frac{\sqrt{3}}{2}$ D. None of these

(67) If $\tan\theta = \frac{8}{15}$, terminal arm lies in III quadrant, then $\sec\theta$ =

A. $\frac{8}{17}$ B. $\frac{-17}{15}$ C. $\frac{-17}{8}$ D. $\frac{-15}{17}$

(68) If $\cot\theta = \frac{15}{8}$, the find the value of $\cos\theta$ where θ is not in the first quadrant.

A. $\frac{15}{17}$ B. $-\frac{15}{17}$ C. $\frac{17}{15}$ D. $-\frac{17}{15}$

(69) If $\cot\theta = \frac{15}{8}$ and the terminal arm of the angle is not in quad $-$ I, then which of the following is the value of $\operatorname{cosec}\theta$

A. $\frac{-8}{17}$ B. $\frac{8}{15}$ C. $\frac{17}{8}$ D. $-\frac{17}{8}$

(70) If $\cot\theta = \frac{15}{8}$, then $\operatorname{cosec}\theta \times \cos\theta$ =?

A. $-\frac{15}{8}$ B. $\frac{15}{8}$ C. $\frac{8}{15}$ D. $\frac{-8}{15}$

(71) If $\tan\theta = \frac{2}{5}$ and $0 < \theta < \frac{\pi}{2}$ then $\frac{4\cos\theta+3\sin\theta}{\cos\theta-\sin\theta} =$ _____

A. $\frac{14}{3}$ B. $\frac{26}{3}$ C. $\frac{13}{7}$ D. None of these

(72) If $\tan\theta = 2$ then $\frac{3\sin\theta+4\cos\theta}{\cos\theta+\sin\theta}$ =?

A. $\frac{10}{3}$ B. $\frac{10}{7}$ C. $\frac{7}{3}$ D. $\frac{17}{3}$

(73) If $\tan\theta = \frac{1}{\sqrt{7}}$ then $\frac{\csc^2\theta-\sec^2\theta}{\csc^2\theta+\sec^2\theta}$ =?

A. $\frac{4}{3}$ B. $\frac{5}{7}$ C. $\frac{3}{4}$ D. $\frac{1}{2}$

(74) The terminal side of $-\frac{\pi}{2}$ lies along:

A. $\overrightarrow{OX}$ B. $\overrightarrow{OX'}$ C. $\overrightarrow{OY}$ D. $\overrightarrow{OY'}$

(75) The terminal side of $-\frac{13\pi}{2}$ lies along

A. $\overrightarrow{OX}$ B. $\overrightarrow{OY}$ C. $\overrightarrow{OX'}$ D. $\overrightarrow{OY'}$

(76) The terminal side of $-1710°$ lies along

A. $\overrightarrow{OX}$ B. $\overrightarrow{OY}$ C. $\overrightarrow{OX'}$ D. $\overrightarrow{OY'}$

(77) The sign of tan 2140° is

A. +ve B. −ve C. both a and b D. None

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(78) What angle is quadrental angle ?

A. 120° B. 270° C. 60° D. 45°

(79) Which of the following angles are coterminal ? , ,

A. $\frac{\pi}{3}, \frac{4\pi}{3}$ B. $\frac{\pi}{3}, \frac{5\pi}{6}$ C. $\frac{\pi}{3}, \frac{13\pi}{3}$ D. $\frac{5\pi}{3}, \frac{\pi}{3}$

(80) The trigonometric ratio of $\frac{13\pi}{3}$ are same as that of _____

A. $\frac{\pi}{3}$ B. π C. $\frac{\pi}{6}$ D. $\frac{11\pi}{3}$

(81) Which of the following angles has same values of trigonometric function as of -675^o?

A. $\frac{\pi}{6}$ B. $\frac{\pi}{4}$ C. $\frac{\pi}{3}$ D. $\frac{\pi}{2}$

(82) $\frac{-17\pi}{3} = \theta + 2k\pi \; where \; k \in \mathbb{Z}, then \; value \; of \; k \; will \; be$

A. 3 B. -3 C. 4 D. -4

(83) $\frac{19\pi}{3} =$ _____

A. 30^o B. 120^o C. 45^o D. 60^o

(84) $\sin 390^\circ$ is equal to:

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

(85) $\cos 30^\circ \cos 60^\circ - \sin 30^\circ \sin 60^\circ = ?$

A. 0 B. 0.866 C. 1 D. None

(86) $\sin^2 30^\circ + \sin^2 60^\circ + \tan^2 45^\circ = ?$

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

(87) Value of $\sin^2\left(\frac{\pi}{6}\right) + \sin^2\left(\frac{\pi}{3}\right) + \tan^2\left(\frac{\pi}{4}\right)$ is_____

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

(88) $2\sin 45^o + \frac{1}{2}\operatorname{cosec} 45^0 =$ _____

A. $\frac{3}{\sqrt{2}}$ B. $\frac{1}{\sqrt{2}}$ C. 2 D. $\frac{5}{\sqrt{2}}$

(89) If $2\sin 45^\circ + \frac{1}{2}\operatorname{cosec} 45^\circ = 3x$ then x =?

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

(90) $\sin\left(409\frac{\pi}{2}\right) = ?$

A. 0 B. 1 C. -1 D. ∞

(91) $\cos\left(-150\frac{\pi}{2}\right) = ?$

A. 0 B. 1 C. -1 D. ∞

(92) $\cot\left(\frac{19\pi}{3}\right) = ?$

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

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(93) What is the value of $\sin\left(\frac{-13\pi}{6}\right)$?

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

(94) $\frac{\sec\theta}{\operatorname{cosec}\theta} =$

A. $\cos\theta$ B. $\tan\theta$ C. $\cot\theta$ D. $\sin\theta$

(95) $(1-\cos^2\emptyset)(1+\cot^2\emptyset) = ?$

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

(96) $(\cot^2\emptyset - 1)(\cot^2\emptyset + 1) = ?$

A. $1-\sin^2\emptyset$ B. $1+\sin^2\emptyset$ C. $\cos^2\emptyset - \sin^2\emptyset$ D. None

(97) $\frac{1-\sin\theta}{\cos\theta} =$

A. $\frac{1-\cos\theta}{\sin\theta}$ B. $\frac{\cos\theta}{1+\sin\theta}$ C. $\frac{1+\cos\theta}{\sin\theta}$ D. None of these

(98) $\frac{1}{1+\sin\theta} + \frac{1}{1-\sin\theta} =$ _____

A. 2 B. 0 C. $\frac{2}{\cos^2\theta}$ D. None of these

(99) $\frac{1}{1+\sin\theta} + \frac{1}{1-\sin\theta} =$

A. 0 B. $2\sec^2\theta$ C. $2\cos^2\theta$ D. $\frac{1}{\cos\theta}$

(100) $\sec\theta\operatorname{cosec}\theta\sin\theta\cos\theta = 1$, if

A. $\forall\theta \in R$ B. $\theta \neq (2n+1)\frac{\pi}{2}, n \in Z$

C. $\theta \neq \frac{n\pi}{2}, n \in Z$ D. $\theta \neq n\pi, n \in Z$

(101) If $\sec^2\varphi + \operatorname{cosec}^2\varphi = \sec^2\varphi \operatorname{cosec}^2\varphi$, then state the domain.

A. $\varphi \neq \frac{n\pi}{2}, n \in Z$ B. $\varphi \neq \frac{n\pi}{3}, n \in Z$

C. $\varphi \neq \frac{n\pi}{6}, n \in Z$ D. $\varphi \neq n\pi, n \in Z$

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