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	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

11th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
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	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

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9th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
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8th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Public Model Q&A	NMMS	Periodical Test

7th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

6th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

1st to 5th Standard	Syllabus	Books	Study Materials	Periodical Test	SLAS	
	Term 1	Term 2	Term 3	Public Model Q&A		

Exams	TET	TNPSC	PGTRB	Polytechnic	Police	Computer Instructor
	DEO	BEO	LAB Asst	NMMS	RTE	NTSE

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UNIT TEST - 13

CLASS: XII

MATHEMATICS

MARKS: 50

TIME: $1\frac{1}{2}$ hrs

CHAPTER: IV

PART - A

I CHOOSE THE BEST ANSWER

5 X 1 = 5

1. The value of $\sin^{-1}(\cos x)$, $0 \leq x \leq \pi$ is
a) x b) $\pi/2 - x$ c) $\pi - x$ d) π
2. If $\sin^{-1}x = 2\sin^{-1}a$ has a solution. Then
a) $a < 1/\sqrt{2}$ b) $|a| \leq 1/\sqrt{2}$ c) $a \geq 1/\sqrt{2}$ d) $a = 1/2$
3. $\sin^{-1}(\cos x) = \pi/2 - x$ is valid for
a) $0 \leq x \leq \pi$ b) $0 \leq x \leq \pi$ c) $\pi \leq x \leq 0$ d) $\pi/2 \leq x \leq 0$
4. If $x = 1/5$, The value of $\cos(\cos^{-1}x + 2\sin^{-1}x)$ is
a) $1/5$ b) $-1/5$ c) $2/5$ d) $-2/5$
5. $\sin^{-1}(2\cos^2x - 1) + \cos^{-1}(1 - 2\sin^2x) =$
a) $\pi/4$ b) $\pi/2$ c) $\pi/3$ d) $\pi/6$

PART - B

II ANSWER THE FOLLOWING QUESTIONS

5 X 2 = 10

6. Find The Principal value of $\sin^{-1}(\sin(\pi/6))$
7. Find all values of x such that $-10\pi \leq x \leq 10\pi$ and $\sin x = 0$
8. Find The Period and amplitude $y = -\sin(1/3 x)$
9. Find The value of $\sin^{-1}[\sin(\pi/3)]$
10. For what values of x does $\sin x = \sin^{-1}x$?

PART - C

III ANSWER THE FOLLOWING QUESTIONS

$$5 \times 3 = 15$$

11. Find The domain of $2\sin^{-1}(2x-1) - \pi/4$
12. Find The value of $2\cos^{-1}(1/2) + \sin^{-1}(1/2)$
13. Find The domain of $\sin^{-1}\left(\frac{|x|-2}{3}\right) + \cos^{-1}\left(\frac{1-|x|}{4}\right)$
14. Find The value of $\tan[\cos^{-1}(1/2) - \sin^{-1}(1/2)]$
15. Find The Principal value of $\operatorname{cosec}^{-1}(-1)$

PART - D

IV ANSWER THE FOLLOWING QUESTIONS

$$5 \times 4 = 20$$

16. Evaluate $\sin[\sin^{-1}(3/5) + \sec^{-1}(5/4)]$
17. If $a_1, a_2, a_3, \dots, a_n$ is an AP with common difference d , Prove That $\tan^{-1}\left(\frac{d}{1+a_1a_2}\right) + \tan^{-1}\left(\frac{d}{1+a_2a_3}\right) + \dots + \tan^{-1}\left(\frac{d}{1+a_na_{n+1}}\right) = \frac{a_n - a_1}{1 + a_1a_n}$
18. Solve $\tan^{-1}(2x) + \tan^{-1}(3x) = \pi/4$, if $6x^2 < 1$
19. Prove That $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \tan^{-1}\left[\frac{x+y+z - xyz}{1-xy-yz-zx}\right]$

_____ X _____ X _____

- | - ALL THE BEST - | -

17/06/2020