

# MHT CET 2023 Question Paper with Answers and Solution May 13 Shift 2 (Memory-based)

**Question 1. The principal value of  $\sin^{-1}(\sin 3\pi/4)$  is?**

**Question 2. Variance of first  $2n$  natural numbers?**

**Question 3. Find probability of getting a black card on a face card from a well shuffled deck of 52 cards?**

**Question 4. If  $(\tan^{-1} x)^2 + (\cot^{-1} x)^2 = 5x\pi^2/8, x=?$**

**Question 5. Solution of  $(1+xy) y dx + (1-xy)x dy=0$  is?**

**Question 6. Solution of  $\sin x + \sin 5x = \sin 3x$  in  $(0, \pi/2)$  are..?**

**Question 7. Sol<sup>n</sup> of  $\sin x + \sin 5x = \sin 3x$  in  $(0, \pi/2)$  are?**

**Question 8. If  $x dy = y(dx + ydy)$ ,  $x(1)=1$ ,  $y(x)>0$ , then  $y(-3)$  is?**

**Question 9. Find area bounded by region,  $y=3x+1$ ,  $y=4x+1$  and  $x=3$ ?**

**Question 10. If  $1 + (\sqrt{1+x}) \tan x = 1 + (\sqrt{1-x})$  then  $\sin 4x$  is..?**

