



National Commerce Olympiad 2012

A True Test Of Your Genius

National Commerce Olympiad Foundation

An NGO For Research & Development Of Commerce Studies

Math XII

1. If A and B are two matrices such that A+B and AB are both defined, then
 - (a) A and B are the two matrices not necessarily of same order
 - (b) A and B are square matrices of same order
 - (c) Number of columns of A = number of rows of B
 - (d) None of these

2. If the value of a third order determinant is 11, then the value of the square of the determinant formed by the co-factors will be
 - (a) 11
 - (b) 121
 - (c) 1331
 - (d) 14641

3. $\lim_{x \rightarrow 0} \frac{e^{\tan x} - e^x}{\tan x - x} =$
 - (a) 1
 - (b) e
 - (c) e-1
 - (d) 3

4. $\int 5^{5^{5^x}} \cdot 5^{5^x} \cdot 5^x dx$ is equal to
 - (a) $\frac{5^{5^x}}{(\log 5)^3} + c$
 - (b) $5^{5^{5^x}} (\log 5)^3 + C$
 - (c) $\frac{5^{5^{5^x}}}{(\log 5)^3} + c$
 - (d) none of these

5. A solution of the differential equation $\left(\frac{dy}{dx}\right)^2 - x \frac{dy}{dx} + y = 0$ is
 - (a) Y=2
 - (b) y=2x
 - (c) Y=2x-4
 - (d) y=2x²-4

6. The probability that at least one of the events A and B occurs is 0.7 and they occur simultaneously with probability 0.2 Then $P(\overline{A}) + P(\overline{B}) =$



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- (a) 1.8 (b) 0.6 (c) 1.1 (d) 1.4
7. 3 mangoes and 3 apples are in a box. If 2 fruits are chosen at random, the probability that one is a mango and the other is an apple is
- (a) $\frac{3}{5}$ (b) $\frac{5}{6}$ (c) $\frac{1}{36}$ (d) none of these
8. $\int \frac{1}{\sqrt{x^2+2x+1}} dx = A \log|x+1| + C$ for $x < -1$, Then $A =$ _____
- (a) -1 (b) 1 (c) 2 (d) -2
9. The value of the integral $\int_{-1}^1 \sin^{11} x dx$ is
- (a) $\frac{10}{11} \cdot \frac{8}{9} \cdot \frac{6}{7} \cdot \frac{4}{5} \cdot \frac{2}{3}$ (b) $\frac{10}{11} \cdot \frac{8}{9} \cdot \frac{6}{7} \cdot \frac{4}{5} \cdot \frac{2}{3} \cdot \frac{\pi}{2}$
- (c) 1 (d) 0.
10. The order of $\begin{bmatrix} a & h & g \\ h & b & f \\ g & f & c \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix}$ is
- (a) 3×1 (b) 1×1 (c) 1×3 (d) 3×3



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Answer key

- 1.(b) 2. (b) 3. (a) 4. (c) 5. (c)
6.(c) 7. (a) 8. (a) 9. (d) 10. (b)

NCOF Sample questions 2012