

MCQ Sample Question <http://www.sscmath.com>

- If  $S$  be the set of all real number except -1 and the operation  $o$  is defined by  $aob = a + b + ab$ ; the solution of the equation  $2oxo5 = 7$  in  $S$  is  
 A)  $x = -1/3$  B)  $x = -10/7$  C)  $x = -17/18$
- If  $1, \alpha_1, \alpha_2, \dots, \alpha_n$  be the root of the equation  $x^n - 1 = 0$ , then the value of  $(1 - \alpha_1)(1 - \alpha_2)(1 - \alpha_3) \dots (1 - \alpha_n)$  is –  
 A) 0 B) 1 C)  $n$  D)  $n^2$
- If  $A = \begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ , then  $A^{-1}$  is  
 A)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$  B)  $\begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$  C)  $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}$  D) None of these
- The angle between the curves  $y = x^2$  and  $xy = 1$  at the point of intersection is  
 A)  $\tan^{-1}3$  B)  $\cot^{-1}3$  C)  $\sin^{-1}3$  D) None of these.
- The semi vertical angle of the cone of maximum volume of given slant height is –  
 A)  $\pi/4$  B)  $\tan^{-1}\sqrt{2}$  C)  $\tan^{-1}\sqrt{3}$  D)  $\tan^{-1}\frac{1}{\sqrt{3}}$
- For the series  $\frac{1}{1^{3r+2}} + \frac{1}{2^{3r+2}} + \frac{1}{3^{3r+2}} + \dots$  which of the following is false?  
 A) If  $r = -\frac{1}{3}$  the series is divergent.  
 B) If  $r = -2$  the series is divergent.  
 C) If  $r = 1$  the series is divergent.  
 D) If  $r = -\frac{3}{2}$  the series is divergent.
- $\int \frac{xe^x}{(x+1)^2} dx$  is equal to  
 A)  $e^x$  B)  $\frac{e^x}{(x+1)^2}$  C)  $(x+1)e^x$  D) None of these
- The area bounded by  $f(x) = x^2$ ,  $0 \leq x \leq 1$ ,  $g(x) = -x + 2$ ,  $1 \leq x \leq 2$  and  $x$ - axis is  
 A)  $3/2$  B)  $4/3$  C)  $5/6$  D) None
- The general solution of the differential equation  $D^2(D+1)^2 y = e^x$  is  
 A)  $y = c_1 + c_2x + (c_3 + c_4x)e^x$   
 B)  $y = c_1 + c_2x + (c_3 + c_4x)e^{-x} + \frac{1}{4}e^x$   
 C)  $y = (c_1 + c_2e^x) + (c_3 + c_4x)e^{-x} + \frac{1}{2}e^x$   
 D) None of these
- The equation  $y = (c_1 + c_2e^x) + (c_3 + c_4x)e^{-x} + \frac{1}{2}e^x$  will represent two parallel straight lines, if –  
 A)  $h^2 = ab$  and  $ag^2 = bf^2$   
 B)  $h^2 = ab$  and  $bg^2 = af^2$   
 C)  $h^2 = ab$  and  $ag^2 = bf^2$   
 D) None of these
- A problem in Mathematics given to three students A, B, C whose chances of solving problem are  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$  respectively. Probability that the problem will be solved is  
 A)  $1/4$  B)  $1/24$  C)  $23/24$  D)  $3/4$   
**Answers: 1.D), 2.C) 3.B) 4.A) 5.B) 6. D) 7. D) 8. C) 9.B) 10. D) 11.D)**