



Q.No	Question Content	Question Image	Category	Sub Category	Marks	Options Randomization	Type	Difficulty
6		Test the convergence of the series $\sum_{n=1}^{\infty} u_n$ where $u_n = \frac{2^n}{n^2+1}$	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
7		Find Laplace transform of the function $F(t) = te^{-4t} \sin 3t$	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
8		Find the inverse Laplace transform of the function $f(s) = \frac{1}{s^3} - \frac{3}{s^2+4}$	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
9		Express the following function in terms of unit step function $f(t) = \begin{cases} \sin t & 0 < t < \pi \\ \sin 2t & \pi < t \end{cases}$	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
10		If $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ , then show that $\text{grad } r^n = nr^{n-2}\vec{r}$ , where $r =  \vec{r} $ .	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
11		If $\vec{F} = 3xy\hat{i} - y^2\hat{j}$ , evaluate $\int_C \vec{F} \cdot d\vec{r}$ , where C is the curve in the arc of the parabola $y = 2x^2$ from (0,0) to (1,2).	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
12	Sanjeev walks 10 m towards the South. Turning to the left, he walks 20 m and then moves to his right. After moving a distance of 20 m, he turns to the right and walks 20 m. Finally, he turns to the right and moves a distance of 10 m. How far and in which direction is he from the starting point? &nbsp;		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
13	Write the statement of Stoke's theorem.		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
14		The ratio of present ages of Suresh and Mahesh is 7:5. If after 6 years their ages will be in the ratio of 4:3, find the present age of Mahesh?	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
15		Introducing a woman, Shashank said, "She is the mother of the only daughter of my son." How that woman is related to Shashank?	Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant



