Roll No. $\square$ Total No. of Pages : 02
Total No. of Questions : 18

# B.Tech.(3D Animation \& Graphics)(CSE/IT) (2012 Onwards) <br> (Sem.-3) 

MATHEMATICS - III
Subject Code : BTAM-302
M.Code : 70808

Time : 3 Hrs.
Max. Marks : 60

## INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

## SECTION-A

Answer briefly :

1. What do you mean by periodic functions? Also write period of Sinl00x.
2. Explain properties of Laplace transformation.
3. Define limit \& Continuity of the function of complex variables.
4. Write down Runge-kutta Method.
5. Explain Poisson distributions.
6. Evaluate $L\left[t^{3} e^{-3 t}\right]$.
7. Find the differential equation of all spheres of fixed radius having their centres in the xy-plane.
8. Discuss the conditions for a fourier expansion.
9. Explain t-distribution.
10. Define mean \& variance.

## SECTION-B

11. If $f(x)=|\cos x|$, expand $f(x)$ as a fourier series in the interval $(-\pi, \pi)$.
12. Evaluate the integral by using Laplace transform $\int_{0}^{\infty} t e^{-2 t}$ sint $d t$.
13. Solve the following partial differential equations :
a) $p-q=\log (x+y)$
b) $x p-y q=y^{2}-x^{2}$
14. Solve : $r-4 s+4 t=e^{2 x+y}$ where symbol's have their usual meaning
15. Determine the analytic function whose real part is $e^{2 x}(x \cos 2 y-y \sin 2 y)$

## SECTION-C

16. Apply Gauss-Seidel iteration method to solve the equations
$20 x+y-2 z=17,3 x+20 y-z=-18,2 x-3 y+20 z=25$
17. What do you mean by normal distribution, $31 \%$ of the items are under $45 \& 8 \%$ are over 64. Find the mean \& standard deviation of the distributions.
18. Two random samples are drawn from two normal populations are shown below :

| A | 17 | 27 | 18 | 25 | 27 | 29 | 13 | 17 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| B | 16 | 16 | 20 | 27 | 26 | 25 | 21 |  |

Test whether the samples are drawn from the same normal population.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

