**1** M-70808

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Total No. of Questions:18

B.Tech.(3D Animation & Graphics)(CSE/IT) (2012 Onwards) (Sem.–3) MATHEMATICS – III Subject Code : BTAM-302 M.Code : 70808

# Time: 3 Hrs.

Roll No.

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  $L[t^3e^{-3t}]$ .
- 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.



Total No. of Pages : 02

Max. Marks: 60

(S2)-1815



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### **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  $\int_0^\infty t e^{-2t} \sin t dt$ .
- 13. Solve the following partial differential equations :
  - a)  $p-q = \log(x+y)$
  - b)  $xp-yq = y^2-x^2$
- 14. Solve :  $r-4s+4t = e^{2x+y}$  where symbol's have their usual meaning
- 15. Determine the analytic function whose real part is  $e^{2x} (x \cos 2y y \sin 2y)$

## SECTION-C

16. Apply Gauss-Seidel iteration method to solve the equations

20x + y - 2z = 17, 3x + 20y - z = -18, 2x - 3y + 20z = 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 :

А	17	27	18	25	27	29	13	17
В	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.