**H.T No**

**Regulations:**

**A15**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 5H112 Date: 17-June-2019 (AN)**

**B.Tech I Year I-Semester External Examination, June-2019 (Supplementary)**

**FUNDAMENTALS OF MATHEMATICS (BT)**

**Time: 3 Hours Max.Marks:75**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**Part - A Max.Marks:25**

**Answer all QUESTIONS.**

|  |  |  |
| --- | --- | --- |
| 1. | Explain one-one and onto functions with examples. | [3M] |
| 2. | Find the equation of the straight line parallel to the line 2x+5y+4=0 and passing through the point (1,8). | [3M] |
| 3. | Evaluate | [3M] |
| 4. | Find the equation of the tangent to curve x2+y2=16 at the point (1,2) | [3M] |
| 5. | Find the second derivative of the function | [3M] |
| 6. | Evaluate | [2M] |
| 7. | Evaluate the value of sin15 0 | [2M] |
| 8. | Find the derivative of log (logx). | [2M] |
| 9. | If z= log(x2 +y2) find | [2M] |
| 10. | Discuss the continuity of f(x)=  at x=0. | [2M] |

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

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| 11. | a) | Find the amplitude of 1+cosθ + i sinθ. | [5M] |
|  | b) | Prove that sin200 sin 400 sin 600 sin 800 = | [5M] |
|  |  |  |  |
| 12. | a) | Transform the equation 2x+5y+10 = 0 into (i) Normal form (ii) Slope –intercept form | [5M] |
|  | b) | Find the equation of the circle passing through (2,1),(4,5) and having the centre on the line2x+y+4=0 | [5M] |
|  |  |  |  |
| 13. | a) | Evaluate | [5M] |
|  | b) | Discuss the continuity of the function  at x = 1. | [5M] |
|  |  |  |  |
| 14. | a) | Find the derivative of sec2x using the fist principle | [5M] |
|  | b) | Find the derivative of . | [5M] |
|  |  |  |  |
| 15. | a) | If y = | [5M] |
|  | b) | Find the extreme value of | [5M] |
|  |  |  |  |
| 16. | a) | Evaluate | [5M] |
|  | b) | Evaluate | [5M] |
|  |  |  |  |
| 17. | a) | Prove that Sin α + Sin β + Sin γ – Sin (α +β+γ) = | [5M] |
|  | b) | Give examples of different kinds of discontinuities of functions | [5M] |
|  |  |  |  |
| 18. | a) | Evaluate | [5M] |
|  | b) | Find the area between the curves y2=4x and x2=4y | [5M] |

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