**H.T No**

**Regulations:**

**A18**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 7HC08 Date: 16-Nov-2020 (FN)**

**B.Tech I-Year II-Semester External Examination, Nov/Dec - 2020 (Regular & Supplementary)**

**ENGINEERING MATHEMATICS-II (CIVIL, EEE, ME and ECE)**

**Time: 2 Hours Max.Marks:70**

***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.*

**ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 14 MARKS.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | a) | Evaluate dx dy. | [7M] |
|  | b) | |  | | --- | | Prove that . | | [7M] |
|  |  |  |  |
| 2. | a) | solve +xy) = 1. | [7M] |
|  | b) | Find Orthogonal Trajectories of where is the parameter. | [7M] |
|  |  |  |  |
| 3. | a) | Solve . | [7M] |
|  | b) | Solve by variation of parameters | [7M] |
|  |  |  |  |
| 4. | a) | Show that | [7M] |
|  | b) | Show that | [7M] |
|  |  |  |  |
| 5. | a) | 1. If the potential function is log( find the flux function and the complex potential function. | [7M] |
|  | b) | Find the Bilinear Transformation which maps the points z =1, i,-1 respectively onto  w = i.,0,-i. | [7M] |
|  |  |  |  |
| 6. | a) | I If f(a)=  where c is |z| =2 then find  f(3), f(1) f(1-i) f11(1-i). | [7M] |
|  | b) | Find the residue of at the respective poles. | [7M] |
|  |  |  |  |
| 7. | a) | Evaluate . | [7M] |
|  | b) | Apply Green’s theorem to evaluate  where c is the plane triangle enclosed by the lines y=0, x=π/2 and y= 2x/π. | [7M] |
|  |  |  |  |
| 8. | a) | Solve . | [7M] |
|  | b) | The number N of bacteria grew at rate proportional to N. The value of N was initially 100 and increased to 332 in one hour. What was the value of N after 3 hours? | [7M] |

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