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| **Scheme of Valuation/Answer Key**(Scheme of evaluation (marks in brackets) and answers of problems/key) |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**FIFTH SEMESTER(S) B.TECH DEGREE EXAMINATION, MAY 2019 |
| **Course Code: EC303** |
| **Course Name: APPLIED ELECTROMAGNETIC THEORY** |
| Max. Marks: 100 | **Set 2** | Duration: 3 Hours |
|  |
| **PART A**  |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | Marks |
| 1 | a) | Definition+ Equation  | (2 )+(1) |
|  | b) | Derivation steps+ final equation | (5 )+(2) |
|  | c) | Applying Laplaceequation, it reduces to , find constants with appropriate boundary conditionThe final equation is  | (3)+(2) |
| 2 | a) | Derivation and final equation  | (5)+(2) |
|  | b) |  | (4)+(4) |
| 3 | a) | List | (4) |
|  | b) |  Similarly for H | (3)+(3) |
|  | c) |  Electric field inside the capacitor The displacement current density, Applying ampere’s law ,  A/m | (3)+(2) |
|  |  |  |  |
| **PART B**  |
| ***Answer any two full questions, each carries 15 marks.*** |
| 4 | a) | Definition | (3 ) |
|  | b) | Derivation steps + final equation = | (3 )+(2) |
|  | c) | Definition and derivation | (4+3) |
| 5 | a) | Derivation of pointing theorem | (10) |
|  | b) | Definition. | (5) |
| 6 | a) | Diagram | (3) |
|  | b) | Derivation of V and I | (4)+(3) |
|  |  | η= 316Ω | (5) |
| **PART C**  |
| ***Answer any two full questions, each carries 20 marks.*** |
| 7 | a) | Explanation | ( 4) |
|  | b) | and steps | (3)+ (5) |
|  | c) | 10+ j0.0358Ω= | (8) |
| 8 | a) |  TM Neat diagram  | (5)+(5) |
|  | b) | Diagram and evaluation of length and location of stub | (5)+(5) |
| 9 | a) | TE Mode in rectangular wave guide | 8+2 |
|  | b) | Comparing the expression,β=2.83ˣ | (7) |
|  | c) | Cut off frequencies are m = 1 n = 0 TE10 =0.75GHzm = 2 n = 0 TE20 =1.5GHzm = 3 n = 0 TE30 =2.25GHz | (3) |
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