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| **Question Number** | **I** | **II** | **III** | **Total** |
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| **Question I:** Choose the correct answer  (1) The initial value problem , has  (a) no solutions (b) many solutions (c) a unique solution (d) None of the previous |
| (2) The following conditions make the differential equation a boundary value problem  (a) , (b) , (c) None of the previous |
| (3) If and are two linearly independent solutions of the same second order differential equation, then  (a) is a constant (b) is a function in (c) is a function in and (d) None of the previous  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| (4) If are roots of the auxiliary equation of a homogeneous Cauchy- Euler differential equation then  (a) (b)  (c) (d) None of the previous  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (5) A linear differential equation with constant coefficients having solutions is  (a) (b) (c) (d) None of the previous |
| **Question II:** A. Find a second solution of the differential equation  if is a solution of the differential equation.  B. Find the integrating factor for the following linear differential equation    **Question III**: A. Solve the following differential equations    (2) = 4  B. Solve the Initial Value Problem  Good Luck☺ |
| B. Find only the form of the particular solution for the differential equation using the annihilator method by    **Question III:**  A. Solve the initial-value problem by superposition approach |

B. Solve the following differential equation

Good Luck ☺