Roll No .....

MEMT - 103

M.E./M.Tech., I Semester

Examination, June 2014

Advanced Electronic Devices

Time : Three Hours

Maximum Marks : 76

Note : 1. Attempt any five questions out of the following.
2. Each question carries equal marks.

1. Describe the magnetic fields equation of motion of perennial electron defects.

2. Explain the operation of reflex klystron with the help of Applegate diagram. Give its advantages and applications.

3. An x - bond pulsed cylindrical magnetron has the following operating parameters

   Anode voltage : $V_0 = 26$ KV

   Beam current : $I_0 = 27$A

   Magnetic flux density : $B_0 = 0.0336$ wb/m^2

   Radius of cathode cylinder : a = 5cm

   Radius of vane edge to the center : b = 10cm

   Calculate :

   i) Cyclotron angular frequency

   ii) Cut off voltage for fixed B_0

   iii) Cut off magnetic flux density for a fixed V_0

4. Explain backward wave crossed field oscillator (carcinotron). What is the difference between linear and circular carcinotron?

5. What are parametric amplifiers? Give its advantages and disadvantages.

6. What is a PIN diode? Describe the construction, characteristics and applications of PIN diode.

7. Describe RIDLEY - WATKINS - HILSUM (RWH) theory. Explain the term differential negative resistance.

8. Write short notes on the following (any three) :

   a) Micro strip transmission lines.

   b) Travelling wave tube.

   c) Tunnel diode.

   d) Monolithic circuits.

******