

APJ Abdul Kalam Technological University
Second Semester M. Tech Degree Examination, May 2016

Cluster: **Kollam**

Branch: **Electrical & Electronics Engineering**

Specialisation: **Power Systems**

Subject: **02 EE6212 DIGITAL PROTECTION OF POWER SYSTEMS**

Time: 3 Hrs

Max. Marks: 60

Instructions: *Answer All Questions from Part A.*

Answer Two Full questions from Part B.

PART A

1. Classify different protective schemes related to power system and explain in brief
2. How the systems can be protected against over current faults?
3. How the circulating current scheme is helpful in providing the transformer protection. Draw its circuit diagram also
4. How the wire pilot protection is useful in protective schemes especially in transmission lines.

(4 x 9=36)

PART B

5. How can the active component of the apparent impedance, i.e., resistance R of the line be measured using microprocessor-based relaying scheme with block schematic diagram and program flowchart
6. (a) Draw and explain a SIMULINK/Power System Block of an one-line diagram of simulation system showing the voltage sources, sending and receiving end impedances, CTs, PTs, analogue filters, faults etc. (8 marks)

(b) Explain the impact of frequency change on distance relay (4 marks)
7. (a) Describe the realization of an over current relay using the microprocessor with program flowchart(Program code not needed) (6 marks)

(b) Explain the following concepts used in computer relays
(i) phasors (ii) fourier transform (6 marks)

(2 x 12=24)
