Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2078, Magh/Falgun

Program: Diploma in Computer/ IT Engineering **Full Marks:80**

Year/ Part: I/II (2018, 2013, 2008 New+Old) **Pass Marks: 32**

Subject: Electrical Engineering **Time: 3 hrs.**

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Five Questions.

1. a) Show the analogy between magnetic circuit and electric circuit.State and explain Kirchhoff's law. [4+4]

   b) State Thevenin's theorem. State and explain Norton's theorem with necessary expression and diagram. [2+6]

2. a) Define following terminology: [2x4=8]

   i) Instantaneous values ii) RMS values

   iii) Active power iv) Power factor

   b) State and explain the maximum power transfer theorem. [8]

3. a) A 230V, 50HZ ac supply is applied to a coil of 0.07H inductive and 2.5Ω resistor in series. Calculate the [8]

   i) impedance ii) current iii) phase angle

   iv) power factor

   b) Explain delta connection of 3-phase and also derive the expression for line and phase qualities. [8]

4. a) Define ideal transformer. Explain construction and working principle of single phase transformer. [8]

   b) Define induction motor. Explain construction and working principal of 3-phase induction motor. [2+6]

5. a) Show the final expression for the RLC series circuit. [8]

   b) Define dry cell and mercury cell. Explain series and parallel connection of cell. [3+5]

6. Write short notes on : **(Any Four)** [4x4=16]

   i) Lead acid cell ii) emf

   iii) Single phase AC motor iv) Lenz's law

   v) Generation of sinusoidal EMF

Good Luck !