



**DUU-003-015302**

Seat No. \_\_\_\_\_

**M. Sc. (Electronic) (Sem. III) (CBCS) Examination**

May / June – 2015

**Paper 10: Electronic Techniques**

**Faculty Code : 003**

**Subject Code : 015302**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**Instruction :-** Attempt all questions. Figures on right hand side indicate marks.

**1** Answer any seven from the following. **14**

- (1) List all the menu items which appear when File → New is performed in Protel schematic.
- (2) List and draw the rough sketch of any four tools of schematic capture Except open, save, print, zoom in and zoom out.
- (3) How one can change the boundary colour of the selected part on the schematic?
- (4) State the difference between visible grid and snap grid.
- (5) How one can draw Pie-chart in schematic capture?
- (6) Comment on  $B = \mu H$ .
- (7) Draw the equivalent circuit of transformer.
- (8) What is the importance of  $A_p$  in designing transformer?
- (9) Mention any four packaging style of SMDs.
- (10) Compare SMT and conventional through hole PCB designing.

- 2** Answer any two from the following.
- (A) Write in detail on logic state analyzer. 7
- (B) Explain following. 7
- (1) Ratsnest
  - (2) Netlist
  - (3) Net label
  - (4) Snap grid
  - (5) Line probe
  - (6) DRC
  - (7) ERC
- (C) Explain solder mask, keep outs, silk screen overlay and drill guides for PCB designing. 7

- 3** Answer any two from the following.
- (A) Write in detail on In-Circuit Emulator. 7
- (B) Write in detail about the manufacturing procedure of low power transformer. 7
- (C) Write on wave soldering and condensation soldering techniques. 7

**OR**

- 3** Answer any two from the following.
- (A) Derive the voltage equation for transformer design and also explain Volt-second product for the same. 7
- (B) Discuss 'Edit' menu of schematic capture in detail. 7
- (C) Write advantages and disadvantages of SMT. 7

- 4 Answer the following.
- (A) Discuss 'component' menu of library editor of Protel. 7
  - (B) How one can decide polarities of an unknown transformer? list the materials used in transformer. Mention all parameters whose values are assumed while designing the transformer. 7
- 5 Answer any two from the following.
- (A) Discuss the various attributes of a part in the schematic capture. 7
  - (B) Explain with diagram how one can determine the resistance of a transformer at designing stage. 7
  - (C) Describe the reflow soldering technique with proper diagram. 7
  - (D) Discuss the thermal designing aspects of a transformer. 7
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