

# 1470

## Code : 15EC-34T

Register Number

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III Semester Diploma Examination, Nov./Dec. 2016

## ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

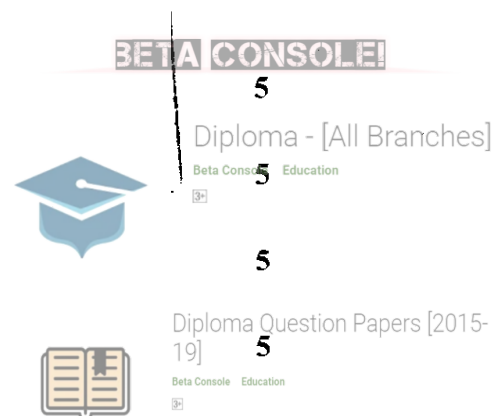
Time : 3 Hours |

| Max. Marks : 100

- Note :**
- (i) Answer any **six** question from Part-A ( $5 \times 6 = 30$  marks)
  - (ii) Answer any **seven** full questions from Part-B ( $7 \times 10 = 70$  marks)

### PART – A

1. Compare the features of AC and DC bridges. 5
2. List the factors for selection of a Transducer. 5
3. List Pros and Cons of Electronic voltmeter. 5
4. Explain : 5
  - (i) Voltmeter Sensitivity
  - (ii) Load effect of voltmeter
5. List the features of standard RF signal generator. 5
6. List the advantages and applications of Digital Storage Oscilloscope. 5
7. Explain with block diagram Microprocessor based instruments. 5
8. Describe successive approximation Digital voltmeter. 5
9. Write short note on grounding and shielding. 5



III B

## PART – B

10. Explain how Wheatstone bridge is used for measurement of resistance and mention its applications. 10
11. (a) Describe direct and indirect methods of measurements. 5  
 (b) Explain the working principle of capacitive transducer. 5
12. (a) Sketch LVDT and explain the working principle. 5  
 (b) Write a note on PIR sensors. 5
13. A basic d'Arsonval movement with internal resistance,  $R_m = 100 \Omega$  and full scale deflection current  $I_{fsd} = 2\text{mA}$ , is to be converted into a multirange dc voltmeter with voltage range of 0–1 V, 10 V, 100 V and 250 V. Draw the necessary circuit arrangement and calculate the values of suitable multipliers. 10
14. (a) Differentiate PMMC over Electrodynamometer. 5  
 (b) Describe DC Ammeter with extension of range. 5
15. Illustrate with block diagram a typical function generator and list its applications. 10
16. (a) List the features of Wave Analyser. 5  
 (b) List the advantages and applications of sampling oscilloscopes. 5
17. Show how Decade counter is used in different modes as Electronic counter. 10
18. (a) Discuss how is automatic polarity indication and automatic zeroing in Digital Instruments. 5  
 (b) List the features of IEEE488 GPIB. 5
19. Write about precaution for instrument safety and instrument usage. 10

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