

B.TECH SEM - III (2007 COURSE) (ELECTRICAL ENGG.) :
SUMMER - 2018

SUBJECT: ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS

Day : **Friday**
Date : **25/05/2018**

S-2018-2575

Time : **02.30 PM TO 05.30 PM**
Max Marks : **80**

N.B.:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from each section.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Answers to both the sections should be written in **SEPARATE** answer books.
 - 4) Use of non programmable **CALCULATOR** is allowed.
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SECTION – I

- Q.1**
- a) Explain the significance of measurement. Give classification of instruments. **(05)**
 - b) Draw and explain the role of CT and PT in energy measurement. **(05)**
 - c) Draw and explain the working of Wheatstone bridge. **(04)**
- Q.2**
- a) Explain the construction & working principle of PMMC instrument. **(06)**
 - b) What are shunts and multipliers? **(07)**
- Q.3**
- a) Give the expression for phase angle error and ratio error for CT. **(06)**
 - b) Explain the advantages of CT & PT over shunts & multipliers. **(07)**
- Q.4**
- a) Draw & explain the working of Kelvin's bridge. **(06)**
 - b) How the calibration of voltmeter and ammeter takes place by using potentiometer. **(07)**

SECTION – II

- Q.5**
- a) State the errors & their adjustments in dynamometer type wattmeter. **(05)**
 - b) Draw block diagram of electronic energy meter. Mention the advantages. **(05)**
 - c) Compare between Analog and digital instruments. **(04)**
- Q.6**
- a) Draw and explain the construction of Dynamometer Wattmeter. **(07)**
 - b) Draw and explain the measurement of power by using CT and PT. **(06)**
- Q.7**
- a) Draw and explain the construction of Dynamometer type power factor meter. **(07)**
 - b) With neat sketch explain working of vibrating read type frequency meter. **(06)**
- Q.8**
- a) Draw and explain the working principle of difference Amplifier type electronic voltmeter. **(06)**
 - b) Draw the block diagram & explain working of DMM. **(07)**

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