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SE-6151

B. E. - II (Civil) (Sem. III) Examination

April/May – 2011

Electronics & Instrumentation

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ B. E. - II (CIVIL) (SEM. III)

Name of the Subject :

☛ ELECTRONICS & INSTRUMENTATION

☛ Subject Code No. : 6 1 5 1 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

(2) Attempt **all** questions.

(3) Figure to the **right** indicate full marks.

(4) Assume suitable data wherever necessary.

SECTION - I

1 (a) Answer the following : **10**

(i) Define : Oscillator.

(ii) Write different types of diodes.

(iii) Mention different class of power amplifiers.

(iv) Define : SCR.

(v) What is the difference between UJT and BJT ?

(vi) What are the basic properties of operational amplifiers ?

(vii) Resistors are linear devices and diodes are ____ devices.

(viii) Draw the symbol of following :

(i) Tunnel diode

(ii) UJT.

(ix) Define instrinsic and extrinsic semi conductors.

(x) Name the filter circuits used in filter circuits.

(b) Explain Zener diode as voltage regulator. **5**

(c) What is the importance of electronics in civil engineering ? Discuss in brief. **5**

2 (a) Explain Class - A and Class - B power amplifiers. **8**

(b) What is filter ? Explain LC filter in detail. **7**

OR

2 (a) Explain Astable multivibrator. **8**

(b) Explain in detail the different regions in transistor and write different configuration of it. **7**

3 Attempt any **three** : **15**

(a) Schottky diode.

(b) Full-wave bridge rectifier.

(c) Working of transistor.

(d) R - C phase shift oscillator.

(e) Phase control rectifier.

SECTION - II

4 (a) Do as directed :

(i) Define the following : **5**

(a) Accuracy

(b) Sensitivity

(c) Static error

(d) Signal to noice ratio

(e) Strain

(ii) Wattmeter is used to measure _____. **1**

(a) Power

(b) Voltage

(c) Current

(d) Resistance

(iii) What is the use of phototransistor ? **1**

(iv) Mention applications of thermistors. **2**

(v) What is the range of potentiometer to measure maximum voltage ? **1**

(b) Explain working principle of LED. **5**

(c) Give merits, demerits and applications of piezoelectric transducers. **5**

5 (a) Explain dual trace oscilloscope. **10**

(b) Explain working principle of strain guage. **5**

OR

5 (a) Where pH meter is used ? Write short note on it. **8**

(b) Write in brief about digital multimeter. **7**

6 Answer the following : (any **three**) **15**

(i) Classification of transducer.

(ii) LVDT

(iii) Types of errors

(iv) Use of CRO in measurement of phase.

(v) Characteristic of thermistor.
