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A-19

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SARDAR PATEL UNIVERSITY

B.Sc. INSTRUMENTATION (VOC.)

SEM – II, April 2016

INSTRUMENTATION SYSTEM -II

SUB CODE: US02CINVO2

DATE: 04TH Apr. 2016

TIME: 10:30 AM TO 12:30 PM

DAY: Monday

TOTAL MARKS: 70

Q. 1 Choose the correct answer.

[10]

- (1) Power supply convert A.C. voltage to _____.
(A) D.C. (C) A.C.
(B) Both (A) & (B) (D) None of above
- (2) Transformer work on the principle of _____.
(A) Piezo electric effect (C) Mutual induction
(B) Doppler effect (D) None of above
- (3) To construct π (pie) filter in power supply, minimum _____ capacitor and _____ inductor required.
(A) 1, 1 (C) 0,0
(B) 2,2 (D) 2,1
- (4) A device convert Non electrical quantity into electric signal is called _____.
(A) Transducer (C) Rectifier
(B) Filter (D) None of above
- (5) In piezo electric transducer _____ type of material is used.
(A) Crystalline (C) Non crystalline
(B) Polar (D) None of above
- (6) Potentiometric transducer work on the principle of changes in _____.
(A) Inductance (C) Capacitance
(B) Resistance (D) None of above
- (7) Photo Darlington pair required minimum _____ transistor.
(A) 1 (C) 2
(B) 3 (D) 4
- (8) The radiation frequency exceeds the _____ frequency of cathode material electrons are emitted from the surface.
(A) Threshold (C) Lowest
(B) Highest (D) None of above
- (9) 1 lm (lumens) = _____ mW (mili. Watt).
(A) 1.496 (C) 14.69
(B) 146.9 (D) None of above
- (10) 7805 regulated I.C gives _____ voltages at output voltage pin no. 3.
(A) 7805 (C) 78
(B) 05 (D) 0578

- Q.2 Answer the following.(attempt any ten, each two marks) [20]
- (1) List opto electric devices.
 - (2) State difference between step up and step down transformer.
 - (3) List the different principle of displacement types.
 - (4) Draw and label the block diagram of power supply.
 - (5) What is transducer? list different type of transducer
 - (6) Just draw the diaphragm and bourdon tube schematic diagram.
 - (7) What is the function of voltage regulator in power supply?
 - (8) What is piezo electric effect? Draw the symbol of piezo electric transducer.
 - (9) Explain photo diode in short.
 - (10) List the force summing members.
 - (11) Explain solar cell in short.
 - (12) Draw any two schematic filters for power supply.
- Q.3 Draw the block diagram of power supply and explain each block in detail. [10]
- OR
- Q.3 (A) Explain full wave bridge rectifier in detail [05]
 (B) Explain 'C' and 'L' filter in detail. [05]
- Q.4 (A) Draw the schematic diagram of strain gauge, explain its working principle, and derive an equation of strain. [10]
- OR
- Q.4 (A) Explain how to select transducer? [06]
 (B) Explain metallic sensing element. [04]
- Q.5 (A) Explain potentiometric transducer in detail [05]
 (B) explain inductive transducer in detail [05]
- OR
- Q.5 Draw any four displacement transducer and explain each in detail. [10]
- Q.6 Explain photo multiplier tube in detail. [10]
- OR
- Q.6 (A) Explain solar cell in detail with necessary circuit diagram. [04]
 (B) Explain photo transistor and photo Darlington pair in short. [06]

-: Best of Luck:-