(76) SEAT No._____ No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY V.V.NAGAR

B.Sc. (SEM-II) - INSTRUMENTATION (Voc.) EXAMINATION

Thursday, 5th April 2018

INSTRUMENTATION SYSTEM-II (US02CINVO2)

TIME:-2:00 pm to 4:00 pm MARKS-70

Q-1 Choose correct answer [10]

1. _____ is the maximum voltage across the diode in the reverse direction.
   (A) Ripple factor (C) Efficiency
   (B) PIV (D) Form factor
2. Power supply convert A.C. voltage to _____.
   (A) D.C (C) Lower ac
   (B) Pulse voltage (D) None of above
3. "C" filter normally connected in _____ for filtering A.C. pulses in power supply.
   (A) Series (C) Not used
   (B) Parallel (D) None of above
4. Strain gage is an example of _____ transducer.
   (A) Passive (C) Electrical
   (B) Active (D) None of above
5. The device which converts non-electrical quantity into electrical is called_____.
   (A) Transducer (C) Rectifier
   (B) Amplifier (D) None of above
6. _____ type of material is used in piezoelectric transducer.
   (A) Silicon (C) Germanium
   (B) Quartz (D) None of above
7. The mechanical elements that are used to convert the applied force into _____ are called force-summing devices.
   (A) Electrical (C) Displacement
   (B) Differential (D) None of above
8. _____ transducer has excellent frequency response and measure both static and dynamic phenomena.
   (A) Capacitive (C) Inductive
   (B) Potentiometric (D) None of above
9. Light intensity is expressed in _____.
   (A) Ampere (C) Volt
   (B) lm/m^2 (D) None of above
10. _____ are employed to switch transistors on and off.
    (A) Photomultiplier tubes (C) Solar cells
    (B) Photoconductive cells (D) Photo diodes

Q-2	**Short answer type question. (any ten)**	[20]
1.	List Opto- electric devices.	
2.	State difference between half wave and full wave rectifier.	
3.	List different types of transducers.	
4.	List the advantages of bridge rectifier.	
5.	Differentiate between active and passive transducers.	
6.	Draw the bourdon tube schematic diagram.	
7.	Define efficiency.	
8.	What is piezoelectric effect? Draw the symbol of piezoelectric transducer.	
9.	Explain photo diode in short.	
10.	List the force summing members.	
11.	Explain solar cell in short.	
12.	Briefly explain LED.	

Q-3	Draw 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 LC and π filter in detail.	[05]
Q.4	Draw the schematic diagram of strain gauge, explain its working principle, and derive an equation for it.	[10]
	OR	
Q.4 (A)	Discuss classification of transducers with necessary parameters.	[05]
(B)	Write a note on gage configuration.	[05]
Q.5	List different types of displacement transducer and Draw any four displacement transducers and explain in detail.	[10]
	OR	
Q.5 (A)	Explain capacitive and inductive transducer in detail.	[05]
(B)	Discuss the method of selecting a transducer.	[05]
Q.6	Discuss phototransistor and photodarlington with neat diagrams.	[10]
	OR	
Q.6	Explain photo multiplier tube in detail.	[10]