

S.Y. B. SC. (Computer Science) SEM –IV (CBCS - 2016 COURSE) :
WINTER - 2018

SUBJECT : ANALOG SYSTEMS

Day : Monday
Date : 22/10/2018

W-2018-0925

Time : 03.00 PM TO 06.00 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw diagrams **WHEREVER** necessary.
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Q.1 Answer **ANY TWO** of the following: [12]

- a) Explain the working of Wheatstone's Bridge using balanced condition.
- b) Explain with neat diagram construction and working of pH measurement electrode.
- c) What is band pass filter? How it is designed? Explain it with proper circuit diagram.

Q.2 Answer **ANY TWO** of the following: [12]

- a) Draw the circuit diagram of an OPAMP based Voltage to Frequency Converter and explain its working.
- b) With neat block diagram explain the piezoelectric humidity sensor.
- c) Draw and explain the block diagram of temperature monitoring system using LM35.

Q.3 Answer **ANY TWO** of the following: [12]

- a) Draw the circuit diagram of first order active low pass filter and explain its working.
- b) What is electrocardiography? Explain with necessary diagram.
- c) Explain working of ultrasonic sensor with neat diagram.

Q.4 Answer **ANY THREE** of the following: [12]

- a) What is meant by Float switch? Explain water level indicator system using float switch with block diagram.
- b) What are different types of touch sensors? Explain any two in brief.
- c) Explain the role of level shifter.
- d) Write short notes on Passive Infrared Sensor (PIR).

Q.5 Solve **ANY FOUR** of the following: [12]

- a) What is LDR? List its applications.
- b) Differentiate between sensors and transducers.
- c) State types of filters and give the function of each.
- d) Write in brief characteristics of inverting amplifier and non-inverting amplifier.
- e) Give any three specifications of sensor.
- f) State any three applications of quantum dots.

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