

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Marks scored:

Level : B. E.
Year : IV

Course : MEPP 427
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

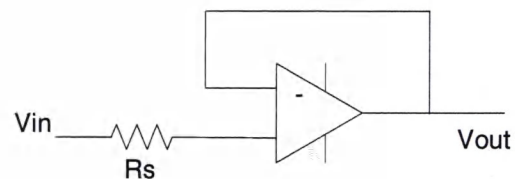
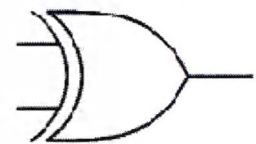
Registration No.:

Date **05 MAR 2019**

SECTION "A"
[10 Q. × 1 = 10 marks]

Encircle the most appropriate answer among the given choices.

- The sensor should be..... to the measured property.
a) Sensitive b) hysteresis c) In sensitive d) Influence
- The mechatronics is an interdisciplinary field in which the disciplines those act together are
a) Mechanical systems and Electronic systems
b) Mechanical systems and Information technology
c) Electronic systems and Information technology
d) Mechanical systems, Electronic systems and Information technology
- Filter which passes signals with band by 2 cutoff frequencies
a) Low pas filter b) high pass filter c) Band pas filter d) All pass filter
- Which of the following properties defines an ideal op-amp.
a) Input impedance is infinite b) Input impedance is finite
c) Input impedance is zero d) Current flows into the input terminals
- Sensor that require external power source to create an output is
a) Active sensor b) Passive sensor c) Variable sensor d) Thermo sensor
- Which one of the following is not a DC Motor?
a) Series motor b) Shunt Motor
c) Induction Motor d) 3 Phase Brushless DC
- The figure alongside shows
a) OR gate b) AND gate c) NOR gate d) XOR gate
- The figure alongside shows
a) Inverting amplifier
b) Non-inverting amplifier
c) Summing amplifier
d) Voltage follower
- An electronic device in which electro magnet pull/push switching element
a) Stepper motor b) Solenoids
c) Solid -state switches d) Relays



10. A rigid piece of material connecting joints in a robot
a) Link b) Manipulator c) Pose d) Joints

SECTION "B"
[5Q. × 1 = 5 marks]

Write 'T' for TRUE and 'F' for FALSE statement.

11. Often outputs from sensors are linear. []
12. Signal amplification is first used in telecom systems (telephone) Analog vacuum tube amplifier technology. []
13. Active sensors don't require the application of external power for their operation. []
14. Digital computers contain circuits that implement Boolean functions. []
15. A joint is device that allows relative motion between two links. []

SECTION "C"
[5Q. × 1 = 5 marks]

Fill in the blanks with most suitable answer.

16. The volume in the space that a robot's end effectors can reach both in position and orientation is
17. Boolean ... are implemented in digital computer circuits as digital logic gates.
18. Binary variable can take only and
19. is a conceptual, mathematical, or physical tool to assist an engineer for decision making.
20. Logarithmic amplifier can be used to the signal.