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**SUBJECT CODE NO:- B-2207**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y (Sem-VI) Examination OCT/NOV 2019**  
**Electronics Paper- XIX (601)**  
**(A) Programmable logic Controllers**

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B (i) Attempt all questions.  
(ii) Use only Blue or black pen.  
(iii) Draw neat diagram wherever necessary.
- Q.1 With the help of neat labelled ladder logic diagram explain the following logic. 20  
(a) OR (b) AND (c) NAND (d) NOT  
**OR**  
Explain jump command for a PLC a ladder logic diagram.
- Q.2 Explain any five types of switches used as input devices to a programmable logic Controller. 20  
**OR**  
Write short notes on any four of the following.  
(a) Processor unit of a PLC.  
(b) DC output module  
(c) Examine – OFF instructions  
(d) Rack assembly  
(e) BSL instructions  
(f) Building a ladder Diagram
- Q.3 Attempt the following multiple choice questions. 10
1. An AND function implemented in ladder logic uses—  
(a) normally closed contact in parallel.  
(b) Normally closed contact in series.  
(c) normally open contact in parallel.  
(d) Normally open contact in series.
  2. The PLC used in -----  
(a) machine tools  
(b) automated assembly equipment  
(c) moulding and extrusion machine  
(d) all of the above
  3. Which of the following can be the output of PLC?  
(a) motors (b) solenoid  
(c) indicators (d) all of the above

4. PLC means -----logic controller.
  - (a) Programmable
  - (b) Periodic
  - (c) Peripheral
  - (d) None of the above
5. The input sensing device in a PLC is -----
  - (a) A motion sensor
  - (b) A sound sensor
  - (c) A heat sensor
  - (d) All of the above
6. The first company to built PLCs was-----
  - (a) Allen Bradley
  - (b) General motors
  - (c) Modicon
  - (d) Square D
7. PLC, are used to control-----
  - (a) Batch process
  - (b) Industrial process
  - (c) Manufacturing process
  - (d) All of the above
8. The process file is made up of 256 programme files and -----data files.
  - (a) 512
  - (b) 16
  - (c) 64
  - (d) 256
9. Pressure Switch detects the pressure of -----
  - (a) Air
  - (b) Water
  - (c) Oil
  - (d) All of the above
10. A Forcing operation is used to test an -----module.
  - (a) Input
  - (b) Output
  - (c) Both (a) and (b)
  - (d) None of the above

OR

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**(B) Instrumentation**

[Time: 1:30 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.  
 Attempt all questions.

- N.B
- Q.1 What is resistive transducer? Explain with suitable diagram potentiometer transducer and resistance 20  
 pressure transducer. 20  
**OR**  
 With the help of neat diagram explain in detail FM recording.
- Q.2 Describe working along with construction of a LCD display. Enlist its important features. 20  
**OR**  
 Write short notes on any four of the following:  
 a) LED display  
 b) Load Cell  
 c) Thermistor.  
 d) Magnetic recorders  
 e) Types of static errors  
 f) Photo transistor.
- Q.3 Attempt the following selecting correct option from the given alternatives. 10
1. The smallest change in a measured variable to which an instrument will respond is the \_\_\_\_.  
 a) accuracy  
 b) resolution  
 c) precision  
 d) none of the above
  2. \_\_\_\_\_ is the rapidity with which an instrument responds to changes in the measured quantity.  
 a) Speed of response      b) Fidelity      c) lag      d) none of the above
  3. In an electrical transducer the relationship between physical parameter and the resulting electrical signal must be \_\_\_\_\_.  
 a) Linear  
 b) Sensitive  
 c) Accurate  
 d) None of the above

4. Capacitive transducers are
  - a) Passive
  - b) Active
  - c) Digital
  - d) None of the above
5. What is moving part of LVDT
  - a) Primary
  - b) Secondary
  - c) Core
  - d) all of the above
6. In photo electric transducer material such as \_\_\_\_\_ used
  - a) Quartz
  - b) Cadmium sulphide
  - c) Lithium sulphate
  - d) Selenium
7. In resistive transducer are those in which the resistance changes due to a change in
  - a) Electrical signal
  - b) Physical phenomenon
  - c) Input voltage
  - d) None of the above
8. In analog X-Y recorder, the writing head moves \_\_\_\_\_
  - a) In X-direction only
  - b) In Y-direction only
  - c) In X and Y direction
  - d) remains fix
9. Photo multiplier tube is an example of \_\_\_\_\_ transducer
  - a) photo resistive
  - b) photo capacitive
  - c) photo electric
  - d) electro magnetic
10. The lowest potential electrode in photomultiplier tube is
  - a) anode
  - b) cathode
  - c) dynode
  - d) grid