(Model Paper) **C –20, EC -504**

State Board of Technical Education and Training, A. P

Diploma in Electronics and Communication Engineering (DECE)

V Semester

Subject Name: Industrial Electronics

Sub Code: EC - 504

Time : 90 minutes **Unit Test I** **Max.Marks:40**

Part-A **16Marks**

Instructions: (1) Answer **all** questions.
(2) First question carries **four** marks, each question of remaining carries **three** marks

1. Draw the circuit symbols of following components
   a) GTO SCR (CO1)
   b) SCS (CO1)
   c) LASCR (CO1)
   d) SUS (CO1)
2. Define intrinsic stand-off ratio of UJT (CO1)
3. Draw VI characteristics of DIAC (CO1)
4. State the need of inverters (CO2)
5. List the applications of SMPS (CO2)

Part-B **3×8=24**

Instructions: (1) Answer **all** questions.
(2) Each question carries **eight** marks
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

6. (a) Explain the triggering of TRIAC in different modes (CO1)

   or

   (b) Explain about speed control of DC motor using SCR (CO1)

7. (a) Explain the construction and working of UJT (CO1)

   or

   (b) Explain the working of MOSFET based Inverter circuit. (CO2)

8. (a) Explain the working of SMPS with block diagram (CO2)

   or

   (b) Explain the concept of deep discharge protection of Battery (CO2)

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V Semester

Subject Name: Industrial Electronics

Sub Code: EC - 504

Time: 90 minutes **Unit Test II** **Max.Marks:40**

Part-A **16Marks**

Instructions: (1) Answer **all** questions.
(2) First question carries **four** marks, each question of remaining carries **three** marks

1. Draw the circuit symbols of following components
   a) LVDT Stands for_____ (CO3)
   b) The control system without feedback is called _____ (CO4)
   c) PLC stands for_____ (CO5)
   d) SCADA stands for_____ (CO5)
2. Define the term transducer. (CO3)
3. Define the term Transfer function in the context of control systems (CO4)
4. Compare open loop and closed loop control systems. (CO4)
5. State the need for PLC (CO5)

Part-B **3×8=24**

Instructions: (1) Answer **all** questions.
(2) Each question carries **eight** marks
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

6. (a) Explain the working principle, construction and applications of resistance strain gauge. (CO3)
   or
   (b) Explain the working principle of accelerometer. (CO3)
7. (a)Explain the closed loop system with the help of a block diagram. (CO4)
   or
   (b)Explain block diagram reduction techniques. (CO4)
8. (a) Draw and explain the functional block diagram of PLC. (CO5)
   or
   (b)Explain a typical SCADA system. (CO5)

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MODEL PAPER
BOARD DIPLOMA EXAMINATIONS
C-23, EC-504, INDUSTRIAL ELECTRONICS
V SEMESTER
SEMESTER END EXAMINATION

TIME:3 HOURS **MAX MARKS:80**

Part-A **10×3=30**

Instructions: (1) Answer **all** questions.
(2) Each question carries **three** marks
(3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. Define intrinsic stand-off ratio of UJT (CO1)
2. Draw VI characteristics of DIAC (CO1)
3. State the need of inverters (CO2)
4. List the applications of SMPS (CO2)
5. Define the term ultrasonics (CO3)
6. State the concept of magnetostriction effect (CO3)
7. Define the term Transfer function in the context of control systems (CO4)
8. Compare open loop and closed loop control systems. (CO4)
9. State the need for PLC (CO5)
10. List any three applications of PLCS in the industry (CO5)

Part-B **5×10=50**

Instructions: (1) Answer **all** questions.
(2) Each question carries TEN marks
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the triggering of TRIAC in different modes (CO1)
12. Explain about speed control of DC motor using SCR (CO1)
13. Explain the working of SMPS with block diagram (CO2)
14. Explain the concept of deep discharge protection of Battery (CO2)
15. Explain the working principle, construction and applications of resistance strain gauge. (CO3)
16. Explain the working principle of accelerometer. (CO3)
17. Explain the closed loop system with the help of a block diagram. (CO4)
18. Explain a typical SCADA system. (CO5)

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