(Model Paper) **C –23, EC -404**

State Board of Technical Education and Training, A. P

Diploma in Electronics and Communication Engineering (DECE)

IV Semester

Subject Name: IoT and Sensors

Sub Code: EC - 404

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. Fill the following blanks with one word
   a) IoT stand for _____ (CO1)
   b) XaaS stands for_____ (CO1)
   c) Sensor in IoT is for _____purpose (CO2)
   d) Actuator in IoT is for _____ purpose (CO2)
2. List the goals of industry 4.0 (CO1)
3. State the role of edge gateway in IoT (CO2)
4. List the common analog sensors used in IoT (CO3)
5. State the role of cloud in IoT (CO1)

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 components of futuristic industrial plant in industry 4.0 with a block diagram (CO1)

   Or

   (b) Explain the concepts of different IoT Levels and Development Templates (CO1)
7. (a) Classify sensors used in IoT based on i) Passive & Active ii) Analog & digital iii) Scalar &vector and give examples (CO2)

   or

   (b)Explain the functions of Sensors & actuators in IoT (CO2)

8. (a) State the function the following sensors: i) Temperature sensors ii) Pressure sensors ii) Motion sensors iii) Level sensors iv) Image sensors (CO3)

   or

   (b) State the specifications of i) DHT11 temperature and humidity sensor module ii) State the specifications of BMP280 Pressure Sensor Module (CO3)

-o0o-

(Model Paper) **C –23, EC -404**

State Board of Technical Education and Training, A. P

Diploma in Electronics and Communication Engineering (DECE)

IV Semester

Subject Name: IoT and Sensors

Sub Code: EC - 404

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. Fill the following blanks with one word

   a) HC-SR501 is a _____sensor (CO3)

   b) NFC stands for _____ (CO4)

   c) _____is an example for Computing Hardware used in IoT (CO4)

   d) _____ is a sensor used in IoT based home automations (CO5)

2. List any three Standard Wireless Access connecting technologies used in IoT (CO4)
3. What is NFC (Near Field Communication) and List its applications (CO4)
4. List any three sensors used in IoT based system for Smart lighting (CO5)
5. List any two actuators used in IoT based system for Smart irrigation (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) State the function of the following actuators:i) Hydraulic Actuators ii) Pneumatic Actuators (CO3)

   or

   (b) State the function of the following actuators:i) Electrical Actuators ii) hermal/Magnetic actuators (CO3)

7. (a) State the use of Standard Wireless Access connecting technologies such as i) WiFi ii) 2G, 3G and standard LTE, 5G in IoT (CO4)

   or

   (b) Differences between NFC and Bluetooth and WiFi technologies (CO4)

8. (a) Explain the IoT based system for Home Automation with block diagram (CO5)

   or

   (b) Explain the IoT based system for Smart irrigation with block diagram (CO5)

-o0o-

BOARD DIPLOMA EXAMINATIONS
C-23, EC-404, IoT and Sensors
IV 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. List the goals of industry 4.0 (CO1)
2. State the role of cloud in IoT (CO1)
3. State the role of edge gateway in IoT (CO2)
4. State the function of computing hardware in IoT (CO2)
5. List the common analog sensors used in IoT (CO3)
6. List the common digital sensors used in IoT (CO3)
7. List any three Standard Wireless Access connecting technologies used in IoT (CO4)
8. What is NFC (Near Field Communication) and List its applications (CO4)
9. List any three sensors used in IoT based system for Smart lighting (CO5)
10. List any two actuators used in IoT based system for Smart irrigation (CO5)

Part-B **5×10=50**

Instructions: (1) Answer **any Five** 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 components of futuristic industrial plant in industry 4.0 with a block diagram (CO1)
12. Explain the concepts of different IoT Levels and Development Templates (CO1)
13. Classify sensors used in IoT based on i) Passive & Active ii) Analog & digital iii) Scalar &vector and give examples (CO2)
14. State the function the following sensors: i) Temperature sensors ii) Pressure sensors ii) Motion sensors iii) Level sensors iv) Image sensors (CO3)
15. State the use of Standard Wireless Access connecting technologies such as i) WiFi ii) 2G, 3G and standard LTE, 5G in IoT (CO4)
16. Differences between NFC and Bluetooth and WiFi technologies (CO4)
17. Explain the IoT based system for Home Automation with block diagram (CO5)
18. Explain the IoT based system for Smart irrigation with block diagram (CO5)

-o0o-