

Version No.			

ROLL NUMBER						



0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

Answer Sheet No. _____

Sign. of Candidate _____

Sign. of Invigilator _____

Internet of Things Hardware Development SSC–II
SECTION – A (Marks 06)
Time allowed: 10 Minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. **Do not use lead pencil.**

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

- (1) Which gate is used for carrying in Half-adder?

A. OR	<input type="radio"/>	B. AND	<input type="radio"/>
C. NOR	<input type="radio"/>	D. XOR	<input type="radio"/>
- (2) Which of the following flip-flop has an undefined state?

A. SR Flip-flop	<input type="radio"/>	B. D Flip-flop	<input type="radio"/>
C. T Flip-flop	<input type="radio"/>	D. P Flip-flop	<input type="radio"/>
- (3) DHT11 has _____ pins?

A. 3	<input type="radio"/>	B. 4	<input type="radio"/>
C. 5	<input type="radio"/>	D. 7	<input type="radio"/>
- (4) Which Interfaces are available on ESP32?

A. Wifi	<input type="radio"/>	B. Bluetooth	<input type="radio"/>
C. IR	<input type="radio"/>	D. A & B	<input type="radio"/>
- (5) Ultrasonic sensor is used to find

A. Temperature	<input type="radio"/>	B. Humidity	<input type="radio"/>
C. Intensity of Light	<input type="radio"/>	D. Distance	<input type="radio"/>
- (6) A 7-segment contains how many LEDs?

A. 3	<input type="radio"/>	B. 1	<input type="radio"/>
C. 4	<input type="radio"/>	D. 7	<input type="radio"/>



Federal Board SSC-II Examination
Internet of Things Hardware Development
(Curriculum 2021)

Time allowed: 2.00 hours

Total Marks: 24

Note: Answer any seven parts from Section 'B' and attempt any two questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

SECTION – B (Marks 14)

Q.2 Attempt any **SEVEN** parts from the following. All parts carry equal marks. Be brief and to the point. (7 × 2 = 14)

- i. How many half-adders will be required to build a 16-bit adder.
- ii. Define Sequential Circuits.
- iii. Differentiate between sensors and actuators.
- iv. What is the difference between ESP8266 and ESP32?
- v. Differentiate between Wi-Fi and Bluetooth protocol.
- vi. How a distance from an object is calculated using ultrasonic sensor?
- vii. Describe the working principle of TM1637.
- viii. Describe 7-segment display.
- ix. Define Freelancing and name some platform?
- x. Define Entrepreneurship.

SECTION – C (Marks 10)

Note: Attempt any **TWO** questions. All questions carry equal marks. (2×5 = 10)

Q. 3 Write a code to run Wi-Fi and Bluetooth simultaneously using ESP32.

Q. 4 Describe different types of entrepreneurship.

Q. 5 Write steps of Interfacing TM1637 with Arduino UNO.

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