Internet of Things Hardware Development SSC–I

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) A voltmeter is used to measure:
   A. Resistance ◯   B. Voltage ◯
   C. Current ◯   D. Amplitude ◯

(2) _____ can store electrical charge.
   A. Resistance ◯   B. Capacitor ◯
   C. Inductor ◯   D. Transformer ◯

(3) There are _____ p-n junctions in a BJT.
   A. 1 ◯   B. 2 ◯
   C. 3 ◯   D. 4 ◯

(4) In MOSFETs, which terminal is insulted from the semiconductor body?
   A. Drain ◯   B. Source ◯
   C. Gate ◯   D. Threshold ◯

(5) How many microcontrollers are based on bits?
   A. 1 ◯   B. 2 ◯
   C. 3 ◯   D. 4 ◯

(6) Which of the following IDEs is used for Arduino?
   A. Keil ◯   B. Microsoft Visual Studio ◯
   C. Eclipse ◯   D. Arduino IDE ◯

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Federal Board SSC-I 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. $(7 \times 2 = 14)$

   i.   What is the difference between AC and DC quantities?

   ii.   What is an electric circuit?

   iii.   Define rectification.

   iv.   What are the applications of diode?

   v.   Define Zener diode.

   vi.   Define UJT.

   vii.   Define FET.

   viii. Define microcontroller.

   ix.   What is meant by pin configuration?

   x.   What is the disadvantage of using UJT?

SECTION – C (Marks 10)

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

Q. 3   Find the voltages across R_1, R_2 and R_3.
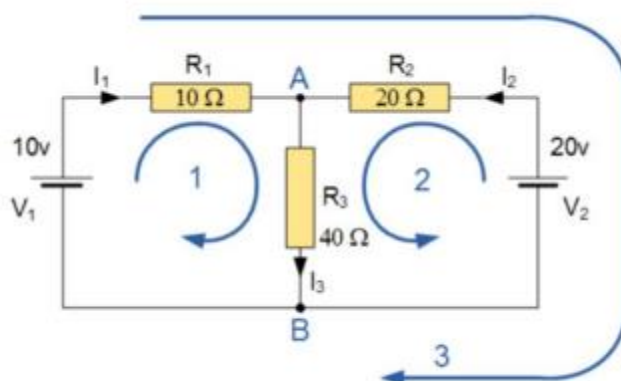
Q. 4   Explain the working of MOSFET.

Q. 5   Describe the load regulation and how a Zener Diode can be used for load regulation.

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