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BEE-042

DIPLOMA IN MECHANICAL ENGINEERING (DME)

Term-End Examination

00673

June, 2018

BEE-042 : ELECTRONICS

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt* ***five*** *questions in all. Question no.* ***1*** *is* ***compulsory.***

1. State *True* or *False* for the following statements : *7×2=14*

(a) A germanium atom contains two balance electrons.

(b) The bridge rectifier is not used for low voltage applications.

(c) The collector is thinner than emitter.

(d) The electrostatic deflection of electron in deflecting plates of a CRO is a parabola.

(e) A thermistor is a semiconductor device with a positive temperature coefficient of resistance.

(f) In the active region of operation, the MOSFET can be used as an amplifier.

(g) SCR is a four-junction and three-layer device.

2. (a) What is a TRIAC ? Draw and explain V-I characteristic of a TRIAC. 7

(b) Explain the following with truth table and logic circuit : 7

(i) Clocked SR flip-flop

(ii) D flip-flop

3. (a) Convert the following hexadecimal numbers into decimal numbers : 7

(i) C7F5

(ii) 7BFC

(b) Draw the truth table for 3-input OR and AND Gate. 7

4. (a) Draw the schematic diagram of Rotary Variable Differential Tranducer and explain its working. 7

(b) With the help of block diagram, explain the construction and working of digital voltmeter. 7

5. (a) Explain various types of single-phase AC motors with their specific applications. 7

(b) How can transistor be used as

(i) Amplifier, and

(ii) Switch 7

6. Write short notes on any ***two*** of the following : *2×7=14*

(a) Clamper

(b) UJT

(c) Tachogenerator