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BEE-042

DIPLOMA IN MECHANICAL ENGINEERING (DME)

Term-End Examination

December, 2017

00257

BEE-042 : ELECTRONICS

Time : 2 hours *Maximum Marks : 70*

Note : *Question no. **1** is **compulsory**. Answer any **four** questions from the remaining questions.*

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

(a) A zener diode is operated in the breakdown region.

(b) The most commonly used amplifier is the CB connected transistor.

(c) P-type materials have holes in minority and free electrons in majority.

(d) Seismic type transducer is used to measure velocity.

(e) UJT can be used as a relaxation oscillator.

(f) ULSI is the most complex of digital ICs.

(g) Ripple factor is the ratio of DC voltage to ripple voltage.

2. (a) Draw and explain a Bridge Rectifier with waveform. 7

(b) Explain the following : 7

(i) Zener breakdown

(ii) Avalanche breakdown

3. (a) What is a transistor ? Derive the relation between α_{dc} and β_{dc}. 7

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

(i) JK Flip-flop

(ii) RS Flip-flop

4. (a) Describe the principle and application of a CRO with a neat diagram. 7

(b) With the help of a block diagram, explain each component of a monochrome television transmitter circuit. 7

5. (a) What is an SCR ? Draw and explain the volt – ampere (VI) characteristics of an SCR. 7

(b) Explain the difference between UJT and FET. Also, draw the symbol of each. 7

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

(a) Full Adder

(b) LVDT

(c) Radio Communication System