4238

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DECE - THIRD SEMESTER EXAMINATION
ELECTRONIC DEVICES & CIRCUITS

Time: 3 Hours] **[Max.Marks: 80**

PART-A

3x10=30M

Instructions: 1) Answer all the questions and each question carries **three** marks.

2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define α and β of a transistor.

2. Classify the amplifiers based on the type of coupling.

3. List the types of baising circuits of a transistor.

4. State the function of emitter resistor R_E in a self bias circuit.

5. Draw the block diagram showing various stages of a power amplilfier.

6. Mention any three applications of class C power amplifier.

7. Compare the positive and negative feedbacks.

8. What is meant by an Opto-coupler?

9. List the applications of varactor diode.

10. Draw the circuit diagram of a shunt voltage regulator.

5x10=50M

Instructions: 1) Answer any **five** questions and each question carries **ten** marks.

2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

3) Any missing data may be assumed as per standards.

11. Draw and explain the working of common base configuration of transiistor and draw its input and output characteristics.

12. Explain the DC load line and AC load line in CE transistor circuit.

13. Explain the operation of Darlington pair with the help of circuit diagram and give the formula for current gain.

14. Draw the circuit of trnasistor class B push pull amplifier and explain the working using wave forms.

15. Draw and explain the working of Hartley oscillator and write the expression for frequency of oscillator.

16. Explain the construction and principle of operation of depletion type n-channel MOSFET.

17. Explain the construction, working principle and characteristics of LED and list its applications.

18. Draw and explain the operation of transistor Astable multivibrator circuit to generate a square wave.

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