

**6214**  
**BOARD DIPLOMA EXAMINATION**  
**MARCH/APRIL - 2019**  
**DIPLOMA IN APPLIED ELECTRONICS AND INSTRUMENTATION ENGINEERING**  
**ELECTRONIC CIRCUITS**  
**THIRD SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. What are the advantages of JFET over BJT
2. State the principle of operation of N-channel Enhancement MOSFET
3. State the need for proper biasing in amplifier circuits
4. Define Stability factor S
5. Classify amplifiers based on frequency
6. State the principle of voltage-series negative feedback amplifier
7. State the necessity of heat sink for a power transistor and power IC device
8. Draw the circuit diagram of Wein bridge oscillator
9. Draw the circuit diagram of Crystal oscillator
10. Define Sweep Voltage

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each question carries 10 marks*

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

11. Explain the construction and principle of operation of N-channel Depletion MOSFET
- \* 12. Explain the basic amplifier concept of BJT in CE (common emitter) configuration
13. Explain the principle of operation of two-stage RC coupled amplifier with circuit diagram and draw its frequency response
14. Explain the following block arrangements of negative feedback amplifiers with diagrams

a) Current-Series

b) Current-Shunt

15. Explain the working of Wein bridge oscillator with circuit diagram
16. Explain the working of Colpitts oscillator with circuit diagram
17. Explain current sweep circuit using transistor with circuit diagram
- 18A. Draw the circuit diagram of Push-Pull power amplifier
- B. Distinguish between voltage and current time-base generators

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A.A.N.M & V.V.R.S.R POLYTECHNIC , GUDLAVALLERU , KRISHNA

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