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Name of Examination : **Winter 2020** - (Preview)

Course Code & Course Name : **IN201U - Analog Electronics**

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Maximum Marks : **60**   Duration : **3 Hrs**

Edit   Print   View Answer Key   Close   **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. *All questions are compulsory.*
2. *Illustrate your answer with suitable figures/sketches wherever necessary.*
3. *Assume suitable additional data; if required.*
4. *Use of logarithmic table, drawing instruments and non programmable calculators is allowed.*
5. *Figures to the right indicate full marks.*

1)   **Solve any three sub-questions.**

a)   Discuss the behaviour of p-n junction diode under forward and reverse biased conditions.   [5]

b)   What is Clamper Circuit? Classify and explain Clampers.   [5]

c)   Calculate the reverse saturation current of a diode if the current at 0.2V forward bias is 0.1mA at a temperature of 25°C and the ideality factor is 1.5.   [5]

d)   Compare CE,CC and CB configurations.   [5]

2)   **Solve any three sub-questions.**

a)   Draw the circuit diagram of a voltage divider bias and derive expression for Stability factor.   [5]

b)   Draw the circuit diagram of a push-pull amplifier. Explain its operation. Discuss advantages and disadvantages.   [5]

c)   Explain working of Class A amplifier. state its applications.   [5]

d)   Explain the Input and output characteristics of transistor in Common Base Configuration.   [5]

3)   **Solve any three sub-questions.**

a)   Describe the construction and working principle of Enhancement mode and depletion mode MOSFET and draw its characteristics.   [5]

b)   Figure shows the voltage divider bias method. Draw the d.c. load line and determine the operating point. Assume the transistor to be of silicon   [5]
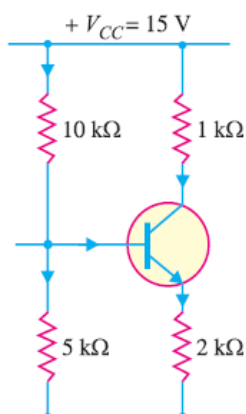
c)   Draw the small signal model of FET. Compare it with model of BJT.   [5]

d)   State advantages of Negative feedback in amplifiers.   [5]

4) a)   Discuss biasing of Enhancement MOSFET. Derive equation for Drain current.   [5]

b)   **Write note on**   [10]

   i. Hartley Oscillator.

   ii. Photodiode.

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