C **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code: U2405

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Second Semester

Electronics and Communication Engineering

21UEC205- Electronic Devices

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

1. If the positive terminal of the battery is connected to the anode of the diode, then it is known as CO1- U

   (a) Forward biased (b) Reverse biased (c) Equilibrium (d) Schottky barrier

2. The input resistance is given by CO4- U

   (a) ΔVCE/ΔIB (b) ΔVBE/ΔIB (c) ΔVBE/ΔIC (d) ΔVBE/ΔIE

3. Which of the following is true for the saturation region CO6- U

   (a) VDG ≤ |Vtp| (b) VSD ≤| VOV| (c) VDG < |Vtp| (d) VSD <| VOV|

4. The efficiency of half wave rectifier is? CO2- U

   (a) 100% (b)90% (c)81.2% (d) 42.5%

5. The base current amplification factor α is given by_____ CO5- U

   (a) IC/IB (b) IB/IC (c) IE/IB (d) IB/IE

PART – B (5 x 3= 15 Marks)

6. Differentiate metals, insulators and Semiconductors. CO1- U
7. Find the efficiency of half wave rectifier if Vm=10V. CO3- App
8. Give the biasing arrangement for an NPN transistor to operate in the active region CO4- U
9. List out the transistor H-parameters CO4- U
10. What are the features of JFET? CO6- U

PART – C (5 x 16= 80Marks)

11.	(a)	Explain briefly about the partially conducting materials and classify the semiconductor types.	CO1-U	(16)
		Or		
	(b)	Describe the operation of DIAC and TRIAC.	CO1-U	(16)
12.	(a)	Explain the working of PN junction diode under different bias conditions	CO2-U	(16)
		Or		
	(b)	Describe the working of Zener junction diode under different bias conditions	CO2-U	(16)
13.	(a)	Compare impedance, admittance and gain of transistors to design amplifier with suitable configuration	CO4-Ana	(16)
		Or		
	(b)	Analyze the current amplification factor and relate CB, CC and CE	CO4-Ana	(16)
14.	(a)	Describe the operation and input and output characteristics of Emitter follower	CO5-U	(16)
		Or		
	(b)	Describe the operation and input and output characteristics of Base grounded configuration	CO5-U	(16)
15.	(a)	Explain the construction, working and operating characteristics of P-channel JFET with relevant diagrams.	CO6-U	(16)
		Or		
	(b)	Explain the principle of operation of enhancement P-channel MOSFET and draw its drain characteristics.	CO6-U	(16)