

Hall Ticket Number :

--	--	--	--	--	--	--	--	--	--	--

R-11 / R-13

Code: 1G334

II B.Tech. I Semester Supplementary Examinations May 2017

Electronic Devices and Circuits

(Common to CSE & IT)

Max. Marks: 70

Time: 3 Hours

Answer any **Five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) Explain V-I characteristics of PN- Junction diode with neat sketches. 7M
b) Explain the breakdown mechanism of Zener diode with relevant diagram. 7M
2. a) With circuit and necessary wave forms, explain the operation of Half Wave Rectifier. 8M
b) An A.C. supply of 220 V is applied to a halfwave rectifier circuit through a transformer with a turns ratio of 10:1 . Find (i) DC output voltage (ii) PIV. Assume the diode is ideal. 6M
3. a) Explain the input and output characteristics of Common Emitter configuration of BJT. 10M
b) Explain how transistor works as an amplifier. 4M
4. a) What is biasing? Explain the need of it. List out different types of biasing methods. 8M
b) In a silicon transistor circuit with fixed bias, $V_{CC} = 9\text{ V}$, $R_C = 3\text{ K}$, $R_B = 8\text{ K}$, $\beta = 50$, $V_{BE} = 0.7\text{ V}$. Find the stability factor. 6M
5. a) With a neat construction diagram explain the principle and operation of JFET. Draw its characteristics. 8M
b) Differentiate Depletion and Enhancement MOSFETS. 6M
6. a) Explain the operation of Push- pull amplifier in detail with neat sketches. 8M
b) Find the h_{oe} in terms of Common Base (CB) h - parameters. 6M
7. a) What is the importance of negative feedback in amplifiers and discuss in detail about current shunt feedback amplifier. 10M
b) The Voltage gain of an amplifier without feedback is 60dB. It decreases to 40dB with feedback. Calculate the feedback factor. 4M
8. a) Discuss the basic concept behind the operation of a Wien-bridge oscillator with the help of suitable circuitry and derive expression for relevant oscillation frequency. 8M
b) The values of the two capacitors C_1 and C_2 of the resonant circuit of a colpitt oscillator are $C_1 = 20\text{pF}$ and $C_2 = 70\text{pF}$. The inductor has a value of $22\mu\text{H}$. What is the operating frequency of oscillator? 6M

Hall Ticket Number :										
----------------------	--	--	--	--	--	--	--	--	--	--

R-11 / R-13

Code: 1GC34

II B.Tech. I Semester Supplementary Examinations May 2017

Environmental Science
(Common to ECE & IT)

Max. Marks: 70

Time: 3 Hours

Answer any **Five** questions
All Questions carry equal marks (**14 Marks** each)

- 1. a) Mention few institutions involved and role played by them in protecting the environment. 7M
- b) What are the reasons for the decline of ecosystem globally? 7M

- 2. a) Enumerate few conflicts over water that you have known. 7M
- b) Write a note on alternate energy resources and their usage. 7M

- 3. a) What is over grazing? Write a note on the impact of over grazing. 7M
- b) How soil erosion occurs. Mention few remedial measures to prevent soil erosion. 7M

- 4. a) Explain the effects caused by water pollution and how it will be controlled. 7M
- b) Write short notes on
 - i. Thermal pollution and
 - ii. Marine pollution 7M

- 5. What are the characteristic features of aquatic ecosystem? 14M

- 6. a) Describe the values of biodiversity. 7M
- b) Summarize the threats to biodiversity. 7M

- 7. a) What is Air pollution Act? Mention the postulates of Air pollution Act? 7M
- b) Describe the best practices of solid waste management. 7M

- 8. a) Enumerate the human rights with respect to environment protection. 7M
- b) Write notes on the impact of environment on human health. 7M
