Semester II (B.Tech.)

Er. No.....

Academic Year: 2021-22

Jaypee University of Engineering & Technology, Guna

T-3 (Even Semester 2022)

18B11EC211 – ELECTRICAL SCIENCE

Maximum Duration: 2 Hours

Maximum Marks: 35

Notes:

1. This question paper has ***seven*** questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).

Marks

Q1. Why silicon diode is preferred over germanium diode? Describe the *V-I* characteristics of *P-N* junction diode and calculate the current *I* in the circuit shown in Fig. 1 using the simplified equivalent model of the diode **[05]**

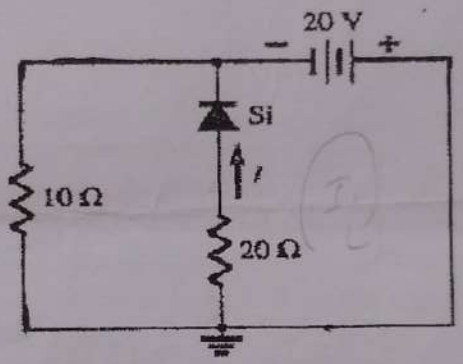

Fig. 1

Q2. Elaborate the clipper circuits. Determine and sketch v_0 in the circuit shown in Fig.2 for positive and negative cycle of the given input v_i. **[05]**

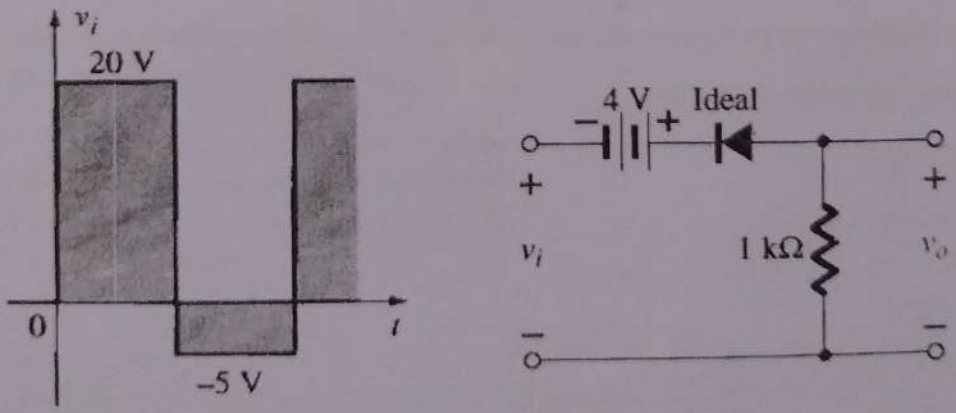

Fig. 2

Q3. Explain the working principle of full wave bridge rectifier circuit and define their performance parameters. [05]

Q4. What do you understand by bipolar junction transistor (BJT)? Explain various biasing conditions of BJT. [05]

Q5. Define short circuit admittance parameters (**Y**-parameters) of two port network and find the **Y**-parameters for the circuit shown in Fig. 3. [05]

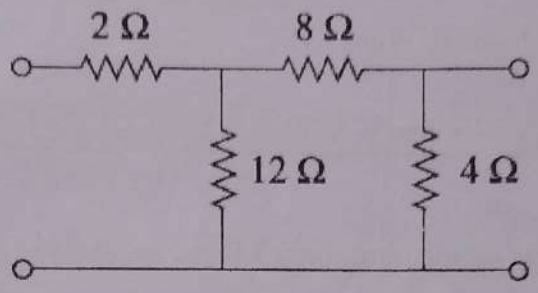

Fig. 3

Q6. For the circuit shown in Fig. 4, calculate equivalent resistance R_{eq} looking from the terminal *a*-*b* and voltage *V* across 20 Ω resistance. [05]

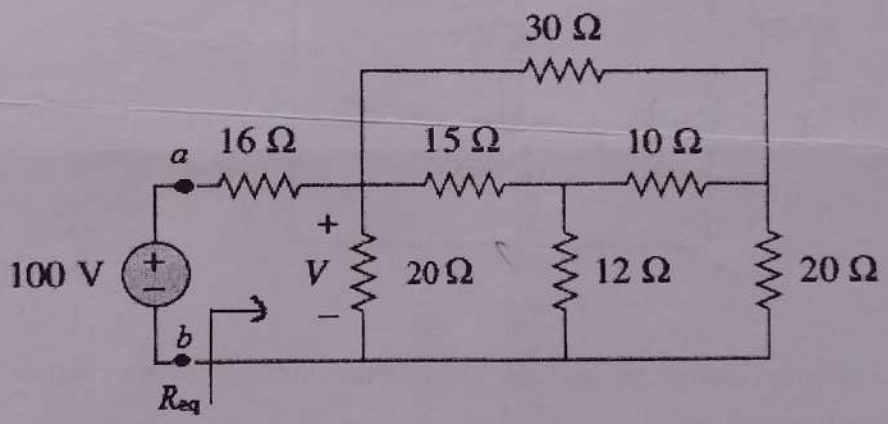

Fig. 4

Q7. Write a short note on the followings. [05]

(i) Hybrid parameters (h-parameters)

(ii) Thevenin's Theorem