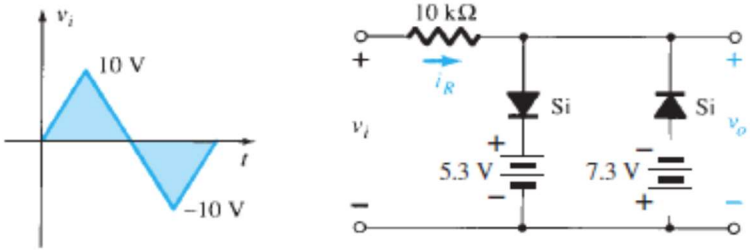
PART-A

1) Draw the symbolic representation of PNP and NPN transistor using PN diode. **[2P]**
2) Write any four fundamental differences between BJT and FET. **[2P]**
3) How the two transistor junctions to be biased for proper transistor amplifier? **[2P]**
4) Sketch i_R and v_o for the network of Fig. below for the input shown. **[4P]**



PART-B

5) Determine R_C and R_B for a fixed-bias configuration if $V_{CC} = 12$ V, $\beta = 80$, and $I_{CQ} = 2.5$ mA with $V_{CEQ} = 6$ V. **[4P]**

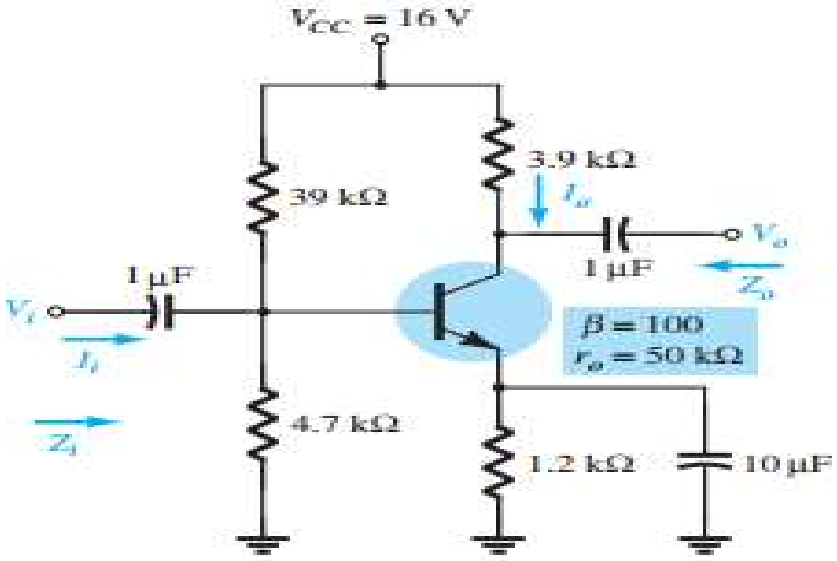
6) For the network given below, **[8P]**

a. Determine value of r*e*.

b. Calculate *Zi* and *Zo*.

c. Find *Av* and Ai

d. Draw AC small signal r_e model equivalent circuit

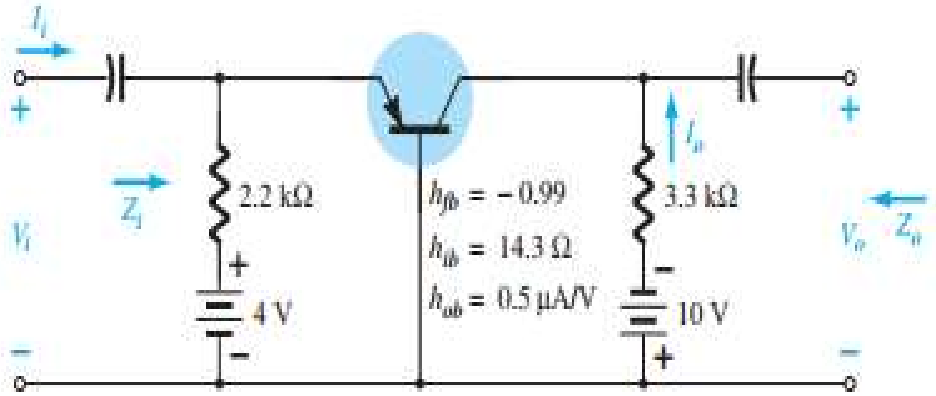


7) For the network given below, **[7P]**

a. Calculate *Zi* and *Zo*.

b. Find *Av* and Ai

c. Draw AC small signal Hybrid equivalent circuit

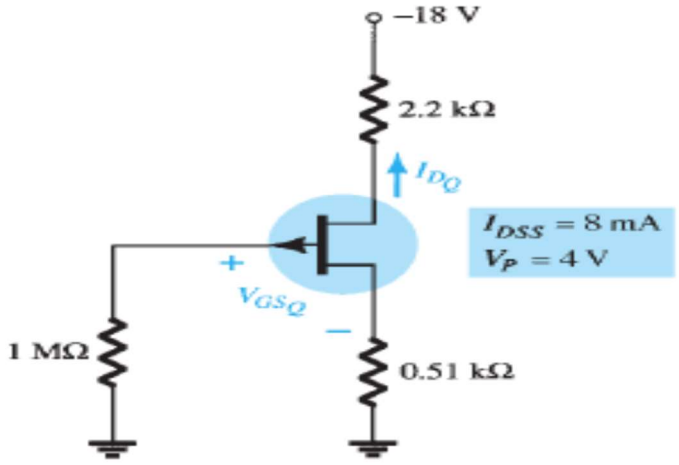


8) For the network of Figure below, determine: **[6P]**

a) I_{DQ} and V_{GSQ}.

b) V_{DS}.

c) V_D.



ADAMA SCIENCE & TECHNOLOGY UNIVERSITY

SCHOOL OF ELECTRICAL ENGINEERING& COMPUTING

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

COURSE: ELECTRONICS CIRCUITS-I (ECEG-2101)

YEAR/SEMESTER: 2ND / 1ST

FINAL EXAMINATION

Student Name: _____ **Date**: 15/04/2022

ID.No: _____ **Duration**: 3:00 Hours

Maximum points: 35

Instructions:

- Answer **ALL** Questions from PART I & PART II
- Not allowed to use **RED** pen
- No additional paper is allowed
- Do not detach the answer sheets from the question papers
- **Unreadable Answers will be subjected to point deduction**
- If required and necessary, 2 sides of the answer page can be used.

Question	Section-A	Section-B				Total
	1-4	5	6	7	8	
Weight	10	4	8	7	6	35
Score						

All the best!!!