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Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)
Vellore – 632014, Tamil Nadu, India

SCHOOL OF ELECTRICAL ENGINEERING
FALL SEMESTER 2023-2024
CAT-II

SLOT: A1

Programme Name & Branch : B.Tech & EEE and EIE
Course Name : Electronic Devices and Circuits Course Code: BEEE205L
Faculty Members : Dr. Venkataraman M.N, Dr. Sankardoss V
Class Number(s) : 1252, 8434
Date of the Examination : 13-10-2024, AN
Duration : 90 minutes

General instruction(s): Answer ALL Questions Max. Marks : 50

Q. No.	Question	Marks	CO	BL
1.	For the following circuit as shown in Fig. 1, find the I_B, Z_i, Z_o, A_v and V_o.	[10]	2	L4

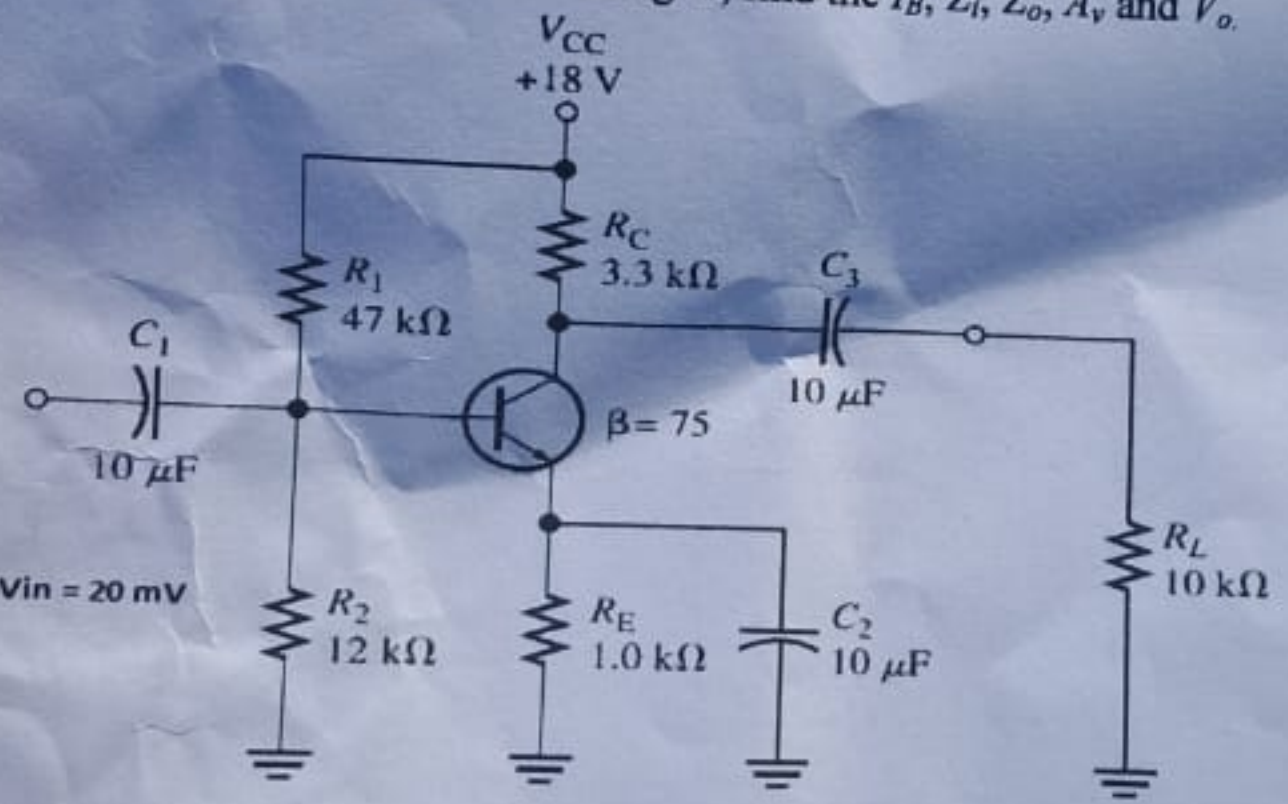


Fig. 1

2.	With the help of neat sketches, explain the construction, working and characteristics of the n-channel EMOSFET.	[10]	2	L2
3.	For the following circuit as shown in Fig. 2, find the I_B, Z_i, Z_o, A_v and V_o.	[10]	2	L4

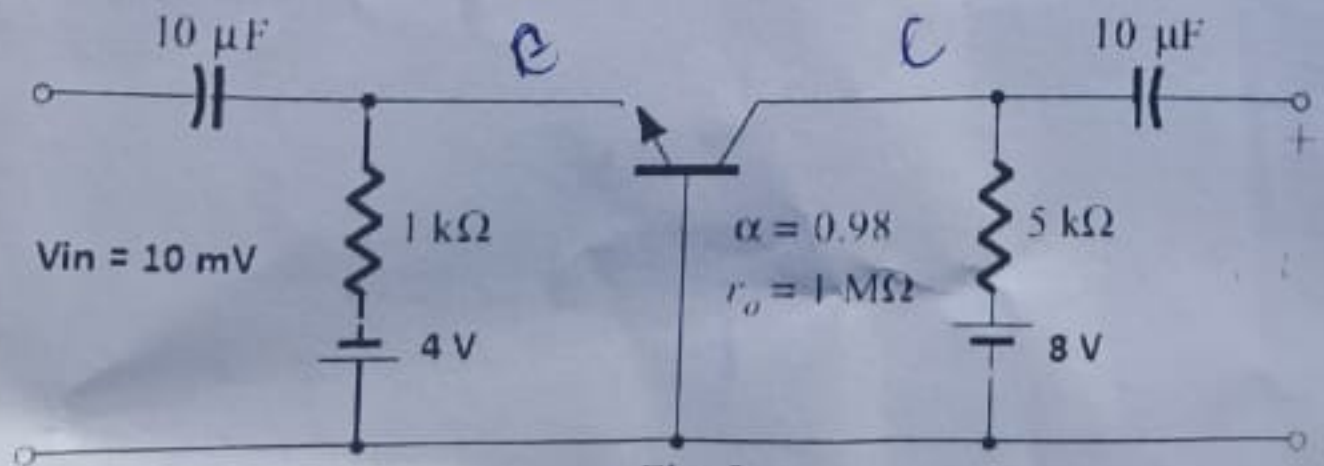
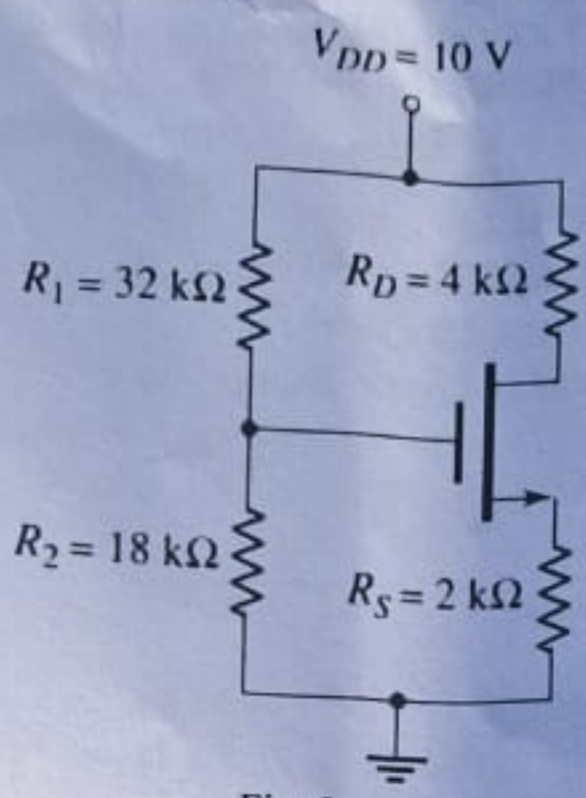
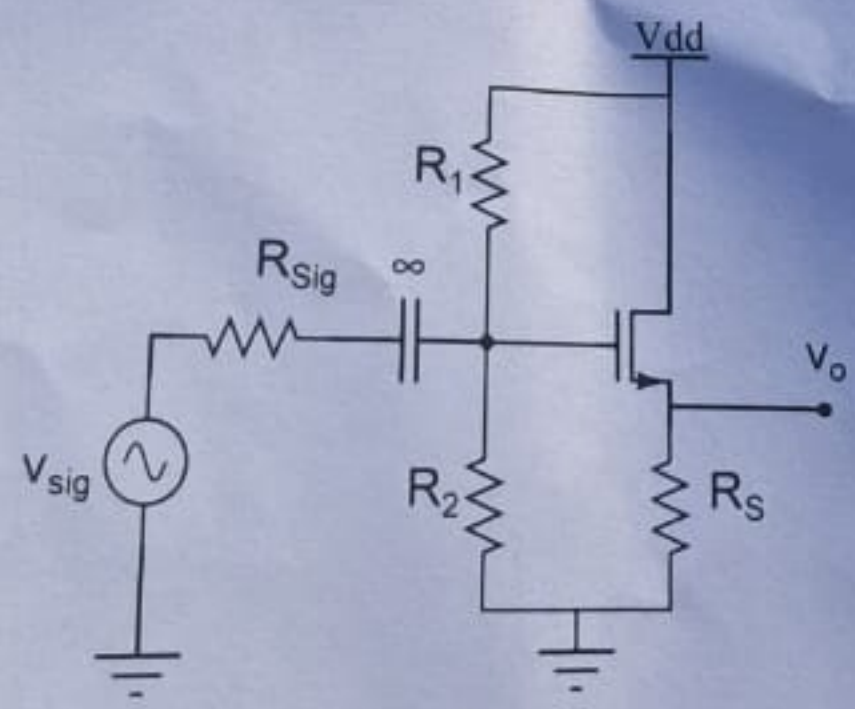


Fig. 2

4.	For the circuit shown in Fig. 3, which uses an n-channel enhancement MOSFET, the transistor parameters are $V_{TN} = 0.8\,V$ and $K_n = 0.5\,mA/V^2$. Find V_{GS}, V_{DS}, I_D and region of operation of the transistor.  Fig. 3	[10]	2	L3
5.	For the following circuit shown in Fig. 4. The circuit parameters are V_{DD} = 12 V, R_1 = 162 kΩ, R_2 = 463 kΩ, R_S = 0.75 kΩ and the transistor parameters are V_{TN} = 1.5V, K_n = 4mA/V^2. Find I_D, V_{DS} and V_{GS}.  Fig. 4	[10]	2	L3