B. TECH. SEM -III (E & TC ENGG.) (2014 COURSE) (CBCS) :
SUMMER - 2018
Subject: Electronic Devices & Applications

Day: **Tuesday** Time: **02.30 PM TO 05.30 PM**
Date: **22/05/2018** **S-2018-2267** Max. Marks : 60

N.B.:
1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.

Q.1 Explain in detail compensation techniques; Thermistor and diode compensation. **(10)**

OR

Q.1 Draw a voltage divider bias circuit and derive and expression for stability factor. **(10)**

Q.2 Determine the input impedance, output impedance, Voltage gain and current gain for the CE amplifier of figure. The h-parameters of the transistor of h_{fe} =60, h_{ie} = 500 Ω at I_c = 3mA. **(10)**

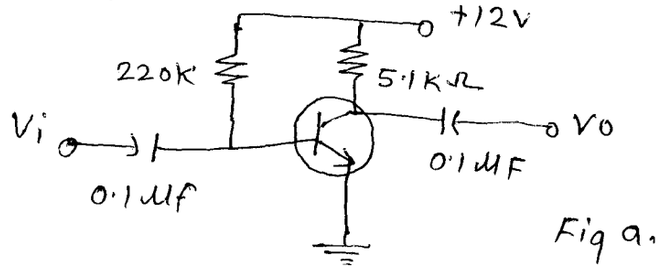

Fig a.

OR

Q.2 Derive the equations for voltage gain, current gain, input impedance and output admittance for a BJT using low frequency h-parameter model for **(10)**
a) CE configuration **b)** CB configuration **c)** CC configuration

Q.3 Explain following FET biasing in detail **(10)**
i) Self bias **ii)** Fixed bias **iii)** current source bias

OR

Q.3 Explain construction, VI characteristic, transfer characteristic of JFET in detail. **(10)**

Q.4 Determine V_{gs}, I_D, V_{DS} and V_G for the circuit show in fig. b. **(10)**

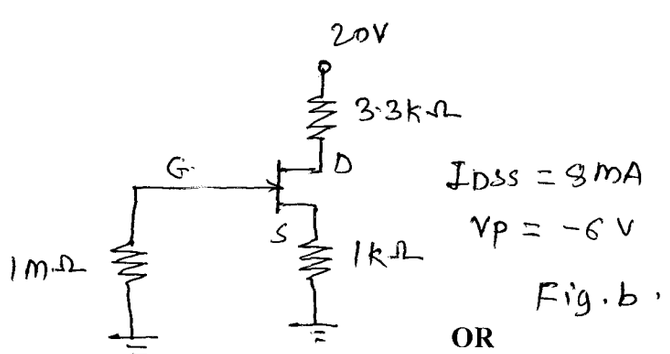

Fig. b.

OR

Q.4 With the help of suitable diagram explain different types of MOSFET. **(10)**

P.T.O.

Q.5 Explain basic clamper circuit. Classify and explain their different types with its application in detail. **(10)**

OR

Q.5 Explain with suitable diagram Astable mutivibrator and monostable multivibrator circuit using BJT. **(10)**

Q.6 Write a construction, VI characteristics and applications of photoconductive cell and photovoltaic cell. **(10)**

OR

Q.6 Write a short note on: **(10)**

i) PCB design Rule
ii) Layout design
iii) Artwork design

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