- MODEL ANSWER -

SUBJECT :- Electronic Devices & Circuits.

SE / Electrical / SEM-III / CBCGS / REV-2016 / MAY-2018.

Que. 1 :- (a) Drift Current

Proper explanation (with fig.) - $2\frac{1}{2}$ M.

Diffusion Current

Proper explanation - $2\frac{1}{2}$ M.

(b) Concept of DC Load Line in CE configuration.

- Fig of CE Ampr & with proper detail diag. of DC Load line - $2\frac{1}{2}$ M.

- Mathematical Expressions with explanation $2\frac{1}{2}$ M.

(c) since FET is unipolar device thermal runaway doesn't exist. 2 M. for const^n details of FET & 3M for explanation.

(d) r_e Model of BJT

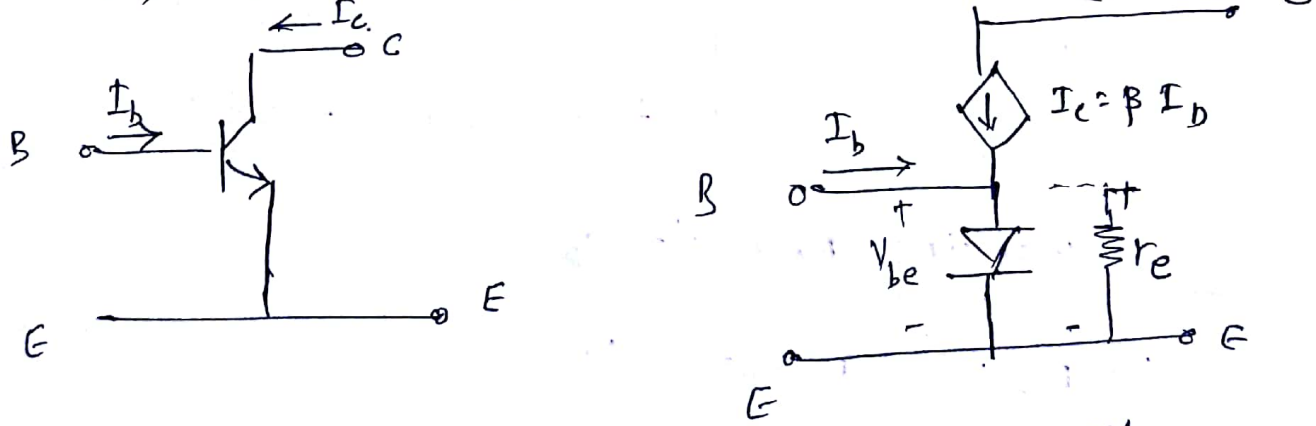

Fig. - 3M, explanation - 2M.

(e) Barkhausen's Criteria. 2 conditions. with figs.

- Fig. - 2M, explanation - 3 M.

Que.(2) :- (a) I/p ch^s - Fig. with BJT in CE configuratio.

O/p ch^s - Fig. & → 5M.

Explanation - 5 M.

Que. 2 (b) Different biasing techniques.
- Mentioning all biasing techniques - 2M.
- Any biasing method (preferably potential divider biasing) Fig. — 4M.
Explanation - 4M.

Que. 3 (a) Working Principle with Fig. Enhancement type MOSFET-5M.
" " " Depletion " " 5M.
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Que. 3 (b). Proper circuit diagram of bridge rectifier with LC Filter & Waveforms - 5M.
explanation:- 5M.

Que. 4 (a) Detail
Block diag. of current series feedback amplr. - 2½ M.
Expression for I/p Impedance - 2½ M
" " O/p " - 2½ M
" " Voltage gain - 2½ M.

Que. 4 (b) - Working Principle of
I] PIN Diode - 1M
II] FET - 3M
III] L-C. Tank circuit - 3M
IV] Schottky Diode - 3M.

Que. 5 (a). Circuit diag & Colpitt Oscillr - 2½ M
working principle:- 2½ M.
expression for frqn of oscillation with explanation - 5M.

Que. 5 (b). BJT as CE Amp^r - ckt. diag. - 2M.
h-parameter model fig. - 3M.
Expression for voltage gain with details - 5

Que. 6 (a) UJT Relaxation Oscillation
Fig. & Waveforms - 4M.
Explanation - 3M.

(b) Zener Diode as voltage regulator.
Fig. with Zener Ckts - 4M.
Explanation - 3M.

(c) Two port network.
Fig. - 3M.
Any detail (with h parameter or r_e model)
explanation - 3M.

(d) I/p Ckts - 3M
O/p Ckts - 3M.