

Please check whether you have got the right question paper.

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any Three questions from the remaining Five.
 3. Assume suitable data wherever necessary.
 4. Support your answers with appropriate diagrams, waveforms, reasons etc.

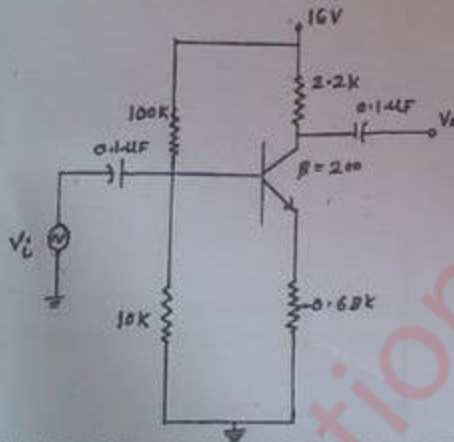
- Q.1. a) i) CC configuration of BJT is used as buffer. Justify.
 ii) CE configuration of BJT is used as voltage amplifier. Justify.
 b) Draw high frequency equivalent of BJT and state high frequency cut-off
 c) Draw CG configuration of FET and its ac equivalent circuit.
 d) Explain MOSFET as a switch.
 e) Derive relation of stability factor 's' for emitter to base bias circuit of BJT.

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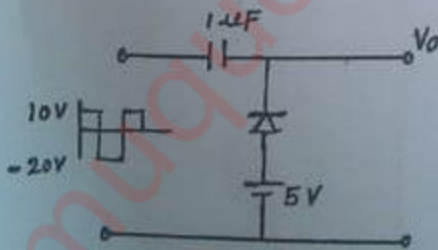
- Q.2. a) Find operating point, A_v , A_i , Z_i , Z_o , S of the given circuit. Draw ac and dc equivalent. If 10mv sine wave input is given, what will be the output? Draw i/p - o/p waveforms.

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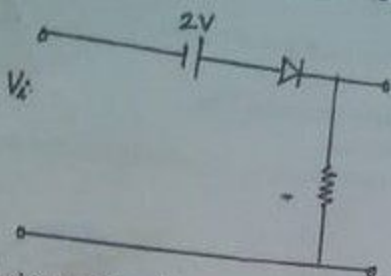


- Q.2. b) Sketch the output waveform for the following circuit.

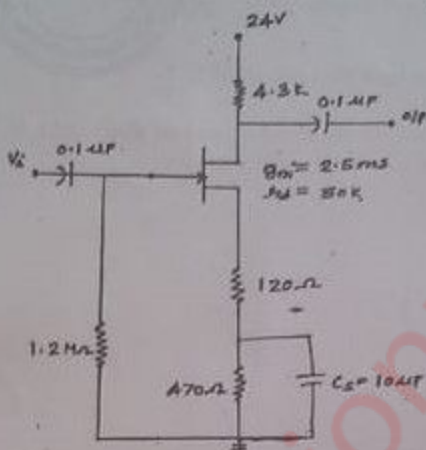
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Q.3. a) Draw the output waveform for the following circuit.

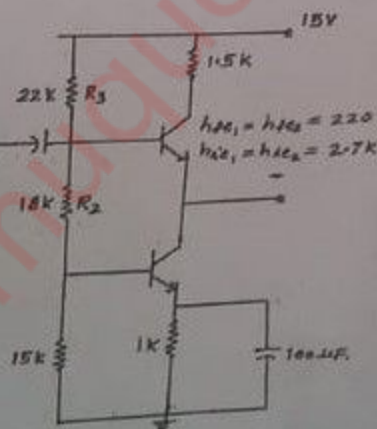


Q.3. b) Find operating point, voltage gain, input and output resistance of the following circuit.
Given $I_{DSS} = 8\text{mA}$, $V_P = 4\text{V}$



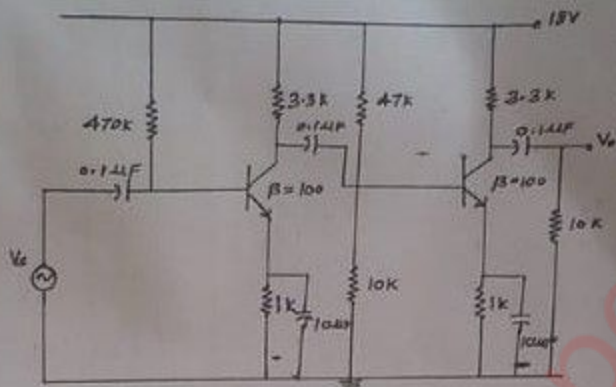
Q.4. a) Design CS amplifier using RET BFW 11 to meet the following specifications. $|A_v| = 10$, $V_o = 1\text{V}$, $R_i > 1\text{M}\Omega$, $f_L = 20\text{Hz}$. Design a circuit to give zero temperature drift of the operating point.

Q.5. a) Calculate ac and dc parameters of cascode amplifier.



Q.5. b) Differentiate enhancement MOSFET and depletion MOSFET. 10

Q.6. a) Find the lower frequency cut-off of the following circuit. 15



Q.6. b) Draw characteristics of Zener diode and explain how it can be used as voltage regulator. 05