2MARKS QUESTION

Ques:) Define Slew Rate and CMRR.

Ques) Determine β_{dc} and I_{CBO} if $I_E = 5mA$, $I_C = 4.95mA$
" $I_{CEO} = 200\mu A$.

Ques) What is Modulation and Modulation Index.

Ques) Define Ripple factor.

Ques) Why BJT is called Current Controlled device.

Ques) Write Ideal characteristics of op-Amp.

Ques) Distinguish b/w avalanche and Zener breakdown.

Ques) How MOSFET can be Voltage controlled device.

Ques) The BJT circuit has $I_C = 10mA$ and $\alpha = 0.98$. Determine the value of β and I_E.

Ques) Sketch the input and output characteristics of CB BJT configuration.

Ques) Write down the stability factor for BJT amplifier.

Ques) Minimize the Boolean expression $(x+y)(x+y')$

Ques) What do you mean by Leakage Current?

Ques) Convert $(4021.25)_{10} = (\quad)_2$

Ques) An OP-Amp has a differential gain of 10^3 and a CMRR of 100, input Voltage are 1201V and 2001V. Determine the Output Voltage.

Ques) Deffeerntiate depletion and Enhancement type MOSFET.

Ques) Convert the $(6089.25)_{10} \rightarrow (\ )_8$

Ques) Define AM.

Ques) Draw a circuit of an Voltage follower and find an expression for its voltage gain.

Ques) Draw the Characteristics of transfer Characteristics of D-MOSFET.

Ques) why E-MOSFET is called off MOSFET.

Ques) Draw the diagram of Half wave Rectifier.

Ques) Draw the diagram of Full wave bridge rectifier.

Ques) What is the value of I_{rms} in HWR and Full wave rectifier.

Ques) Draw the diagram of Full wave voltage Doubler.

Ques) Why BJT is called a bipolar transistor

Ques) Write Shockley's Eqn.

Ques) What is Modulation?

Ques) What are universal gates?

5 MARKS QUESTIONS

Ans) Draw Circuit Diagram of integrator using OP-Amp and Explain its Working. Also Obtain Expression for its Output.

Ans) Draw the circuit of Subtractor using Op-Amp and Explain its working. Also obtain its Expression for it Output.

Ans) Draw Circuit Diagram of differentiator using OP-Amp and Explain its Working. Also Obtain Expression for its Output.

Ans) Explain the following :- With Diagram & working.
i) Full Wave Rectifier
ii) ~~Bridge Recti~~ Half wave Rectifier

Ans) Draw and discuss Voltage tripler Circuit.

Ans) Draw and Explain the Working of a Bridge rectifier with input and output Waveform. Calculate Efficiency and ripple factor.

Ans) Draw and Explain the center-tapped transfer full-wave rectifier.

A Full wave rectifier use $R_L = 2K\Omega$, Each diodes is to Rav forward resistance $R_f = 2\Omega$ and $R_f = \infty$. A sinsudeo voltage having each amplified of 20V is applied

Find out,

i) Peak, dc and rms value of load.

ii) DC output power

iii) AC input

iv) Efficiency.

Ans) Draw and Discuss Voltage Doubler Circuit.

Ans) Describe the construction, working and characteristics of Enhancement type MOSFETs.

Ans) Explain the construction and working of depletion MOSFET.

Ans) Draw the input and output characteristics of CE NPN transistor configuration with proper label.

Ans) Draw input and output characteristics of a BJT transistor in CE configuration.

Ans) Derive the Relation b/w I_{CBO} & I_{CEO}.

NUMERICALS

Ans) In a Full wave rectifier the load resistance is 2kΩ, η_f = 400 mV, voltage applied to each diode is 240sinωt. Find

i) Peak value of current (I_m)

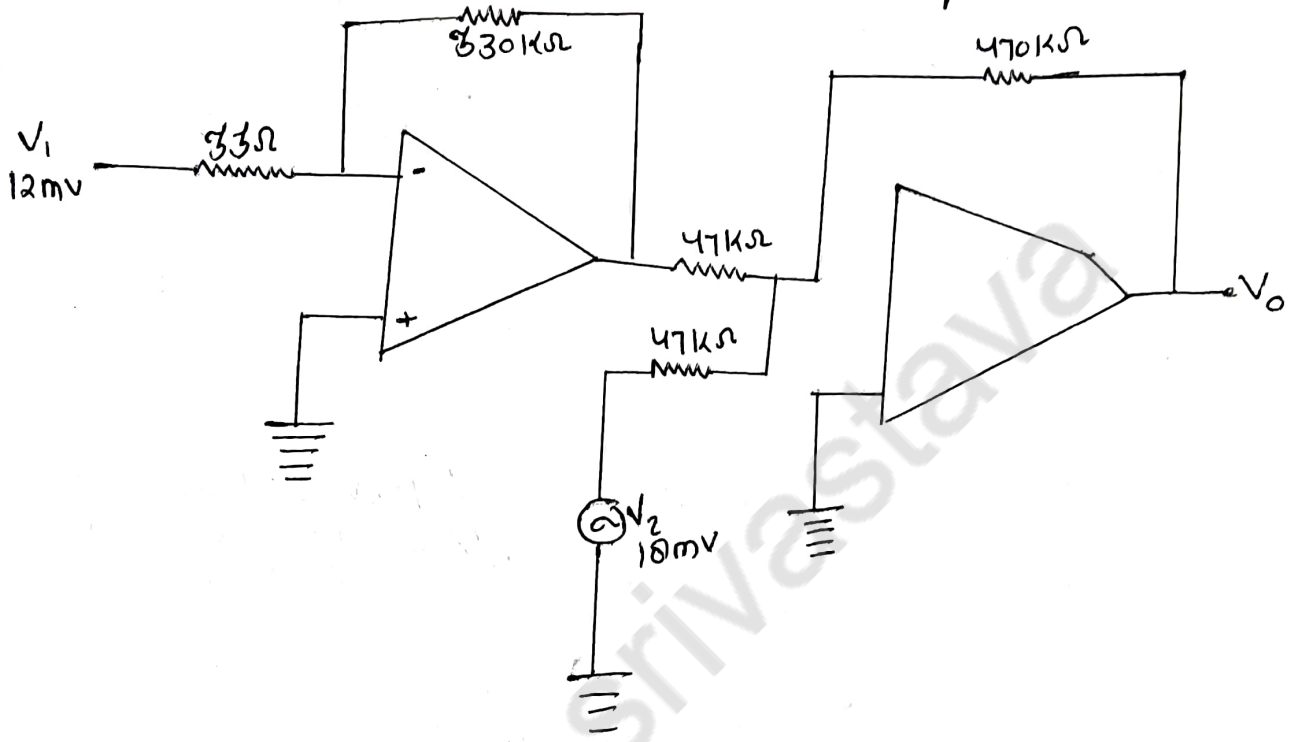
ii) DC value of current (I_{dc})

iii) RMS value of current I_{rms}

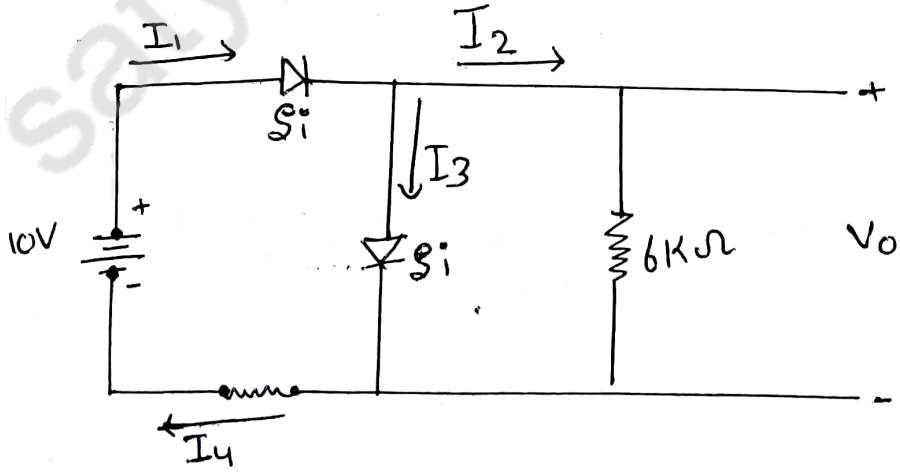
iv) Efficiency

v) Ripple factor

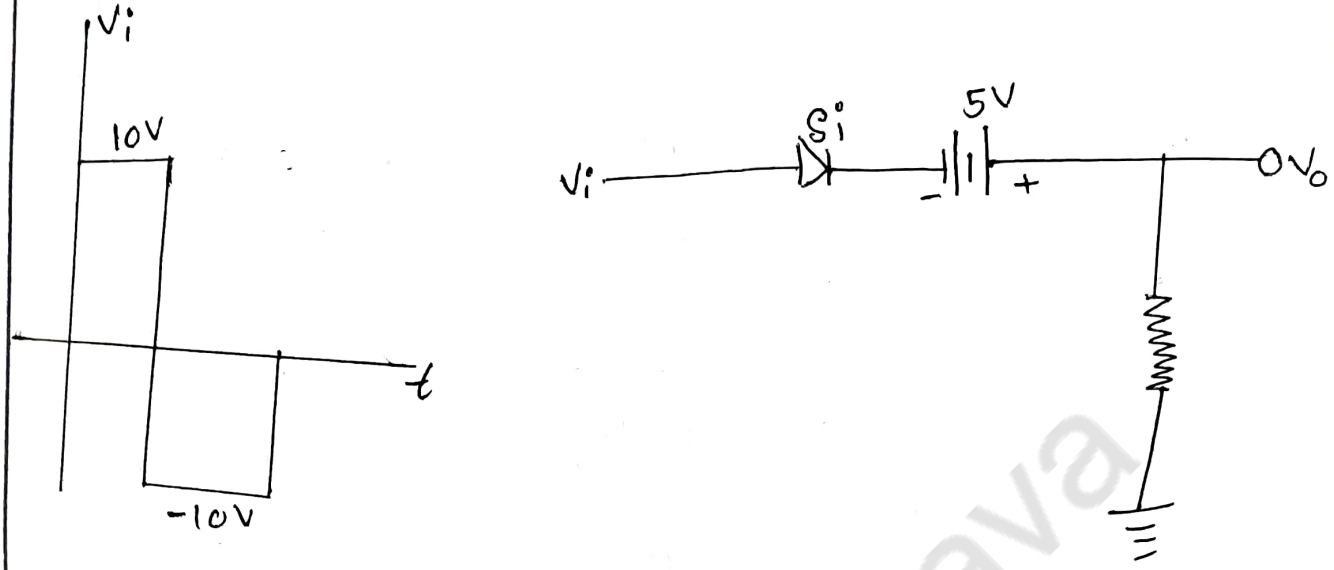
Ans) Calculate the output voltage V_o of the circuit.



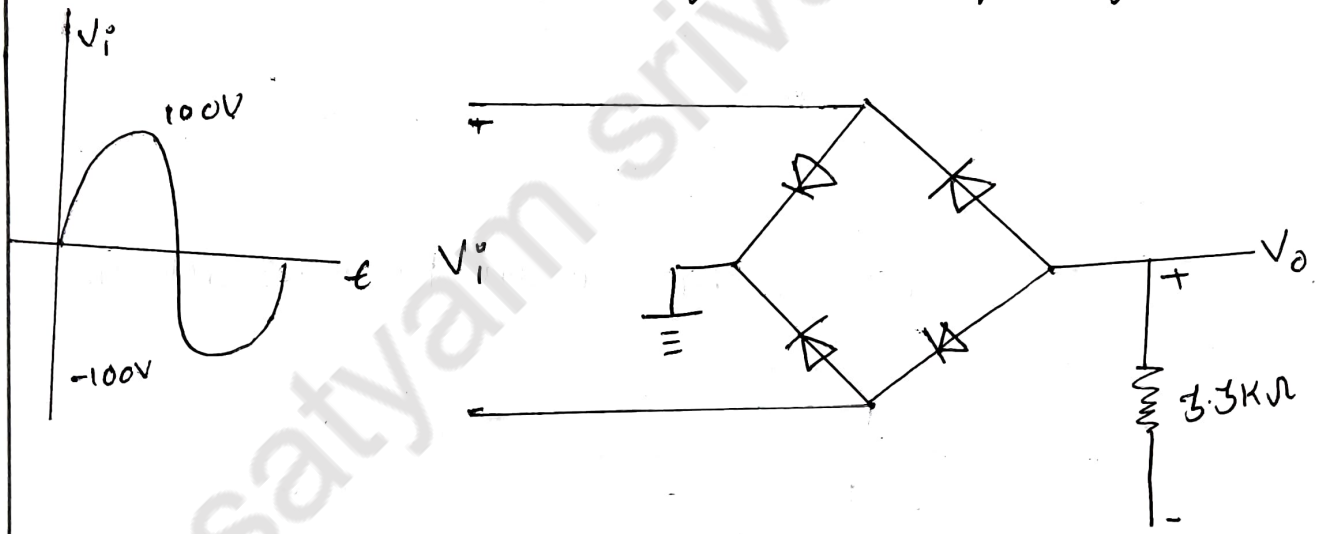
Ans) For the circuit shown Finger below determine I_1, I_2, I_3, I_4, V_o.



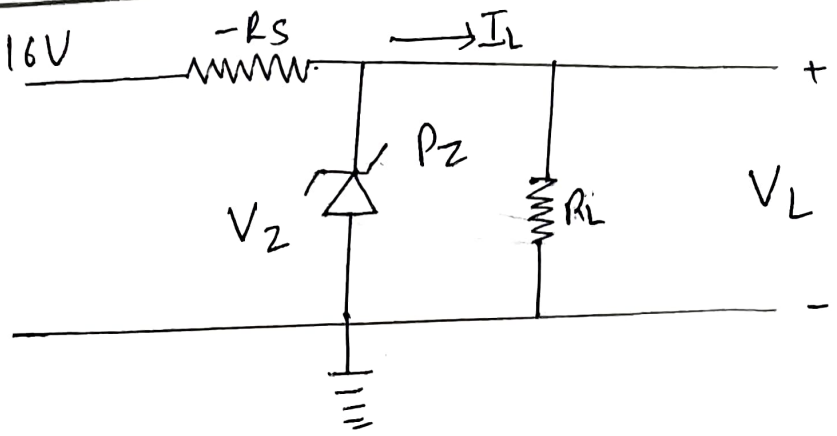
Ans) Determine and sketch V_o for the given network shown in Fig.



Ans) Determine V_o and the required PIV rating of each diode for the configuration of Fig.



Ans) A sinusoidal signal with peak value 6mA and 2KHz frequency is applied to the input of an Ideal Op-Amp integrator with $R_1 = 100.1K\Omega$ and $C_f = 1\mu F$. Find output voltage.



Ques) Explain the element of a Communication system with the help of block diagram

Ques) A certain AM transmitter radiates 9KW with the carrier unmodulated and 10.125KW when the carrier is Modulate. Calculated the Modulation index.

Ques) i) Minimize the following using K-Map technique
$F(A,B,C,D) = \Sigma m(0,3,5,7,11,13) + d(4,6,14,15)$

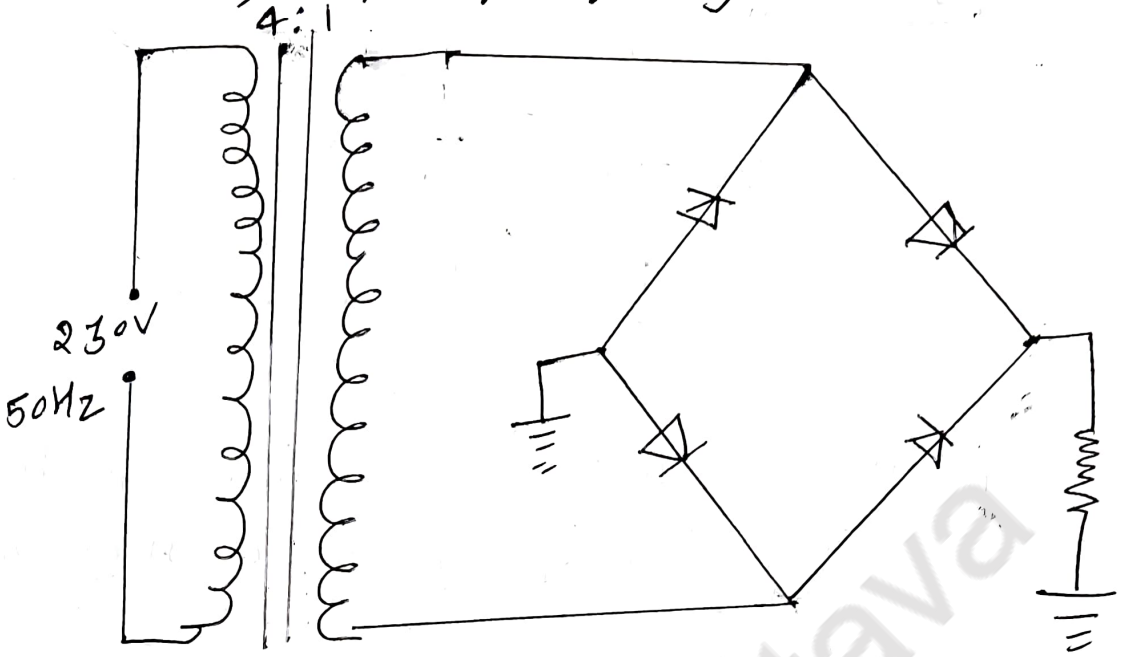
ii) Also implement the simplified function using Basic gates.

iii) Also implement the simplified function using NAND Gate only.

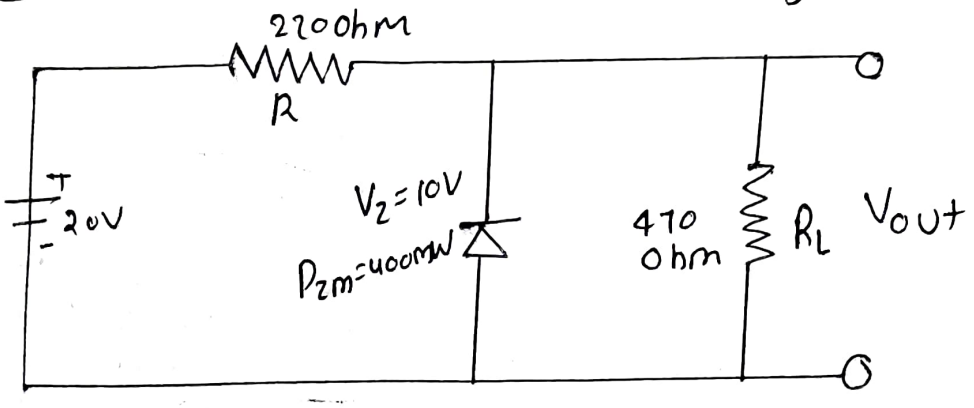
iv) Also implement the simplified function using NOR Gate only.

Ques) A Bridge type circuit shown in Fig in the diode are assumed to be ideal. Find,
i) Dc output Voltage
ii) Peak inverse Voltage

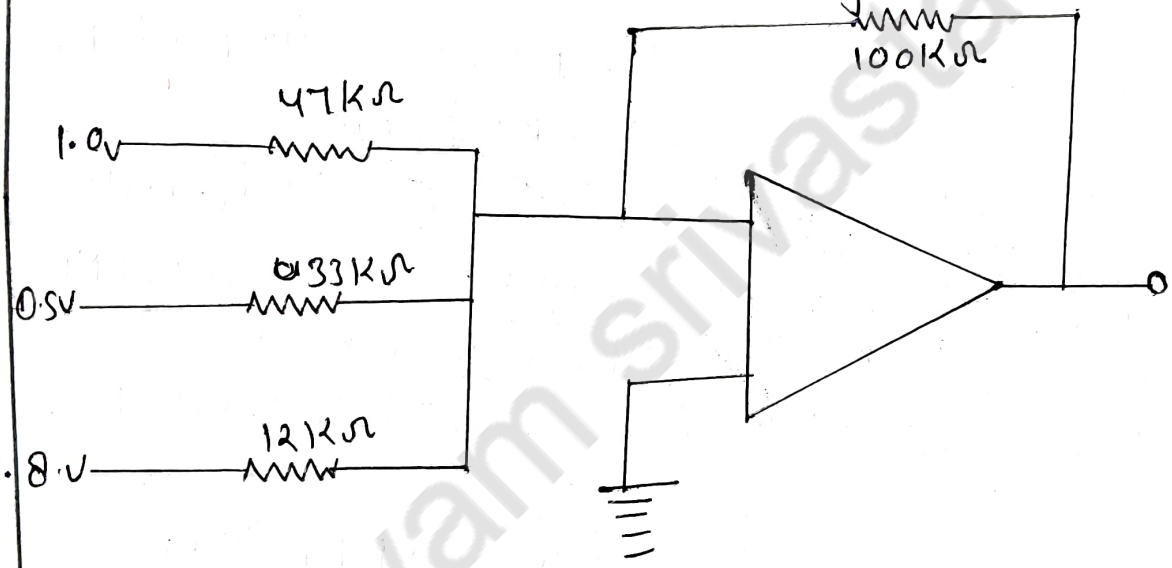
iii) Output frequency



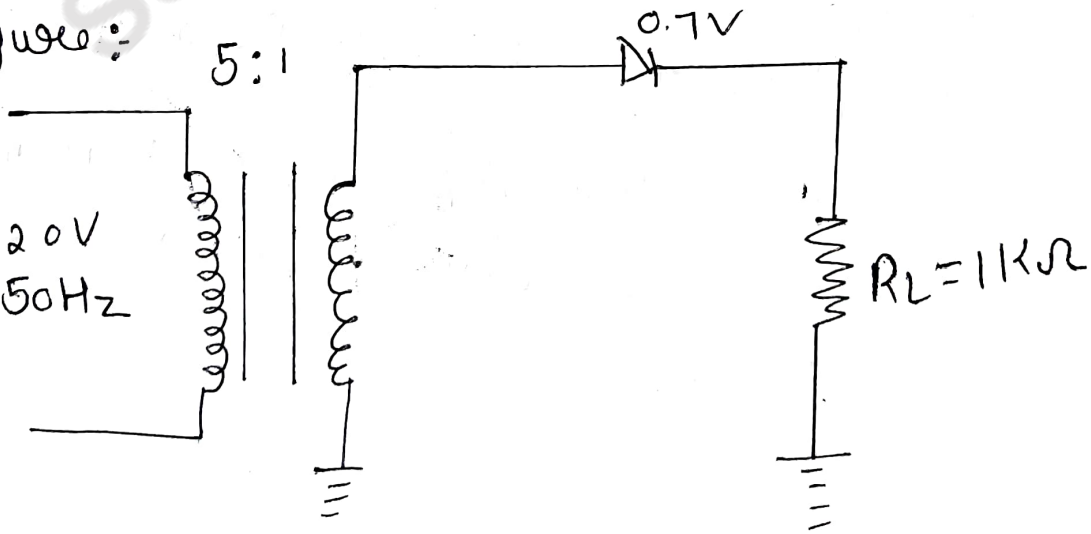
Ques) Determine V_L, I_L, and I_Z for given Zener diode network as shown in Fig.



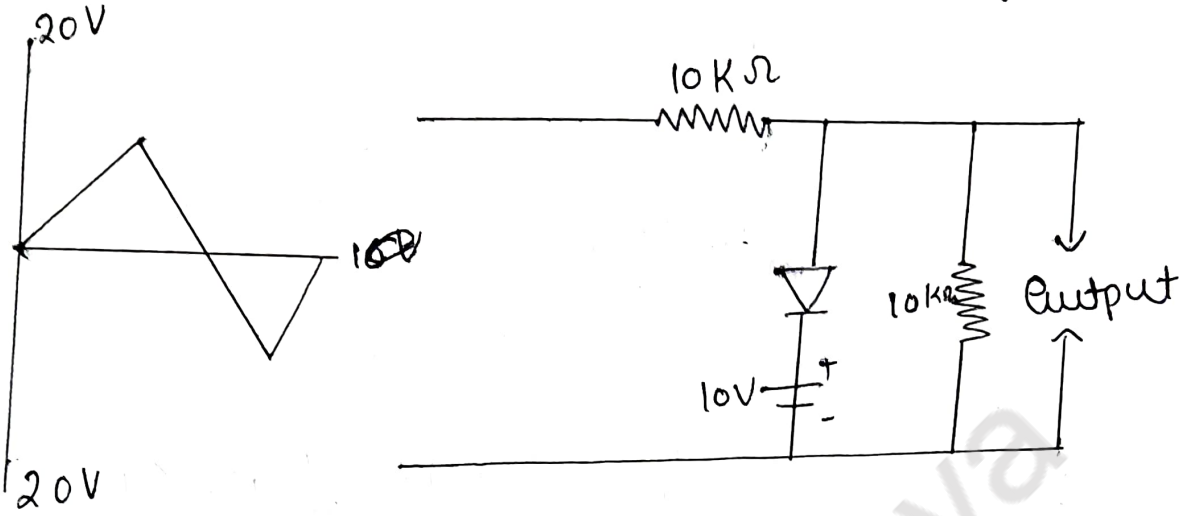
Ques) Determine the output voltage of the op-Amp circuit as shown in Fig.



Ques) Determine the peak load and DC load voltage for the given rectifier as shown in Figure:-



Ques) Draw the Output Waveform for the following circuits for the input waveform in Fig.



Ques) Simplify the following Expression using K-MAP in sum of products (SOP) form.

$F(A,B,C,D) = \Sigma m(1,3,4,6,8,9,11,13,15) + \Sigma d(0,2,14)$

b) Simplify the following Expression using K-MAP in product of SUM (POS) form.

$F(A,B,C,D) = \pi M(0,1,3,6,7,8,9,11,13,14,15)$

Ques) Minimise the following using K-MAP technique. Also implement simplified function using NOR Gates :-

$f(A,B,C,D) = \Sigma m(1,0,2,9,11,15) + \Sigma d(8,10,14)$

Ques) Calculate the value of R_S and R_L to maintain V_L at 12V for I_L to vary from 0 to 200mA Also find V_Z and P_{Zmax}.