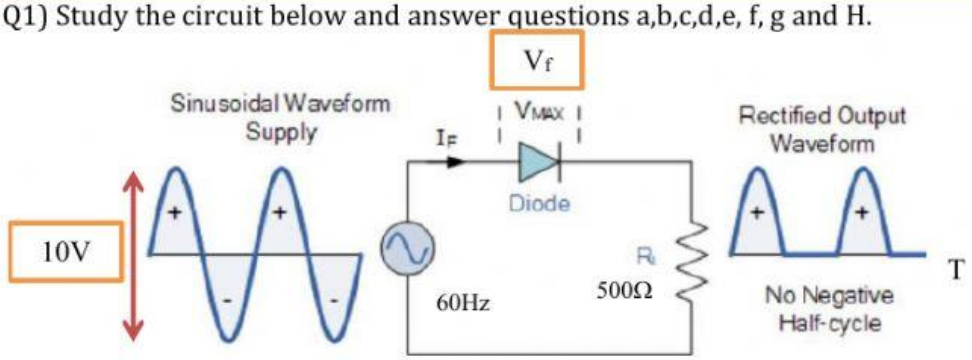
This Worksheet provides evidences for the GC 1.9 to 1.14.

GC	GC1.9	Discuss the circuit construction and principle of operation of half-wave rectifier circuits, and sketch the input and output waveforms.
GC	GC1.10	Calculate the peak output voltage and the average value of the half-wave rectified voltage waveform.
GC	GC1.11	Discuss the circuit construction and principle of operation of full-wave rectifier circuits (Center Tapped Full Wave Rectifier and Full Wave Bridge Rectifier), and sketch the input and output waveforms.
GC	GC1.12	Calculate the peak voltage and the average value of the full-wave rectified voltage waveform. Plot the waveforms across each half of the secondary winding and across the load resistor.
GC	GC1.13	Determine the peak output voltage for the bridge rectified voltage waveform.
GC	GC1.14	Demonstrate, with the aid of diagrams, the effect of adding a smoothing capacitor to the output of half-wave and full-wave rectifying circuits.

Q1) Study the circuit below and answer questions a,b,c,d,e, f, g and H.



a. What is the name of the circuit? ……..
b. What is the Peak input voltage ? …….
c. If the diode used is practical and V_F=0.7V, what the value of the output voltage? ……..
d. Calculate the current in the load resistor R_L= …….
e. What is the value of the average voltage across the resistor? ……..
f. What will be the voltage across the load resistor during the negative half cycle? ……
g. During the positive half cycle the circuit is said to be ……, but is will be revered during the negative half cycle.
h. How does the output voltage across the resistor will look like after adding smoothing capacitor in parallel with the load? As shown below. Please tick the correct answer.

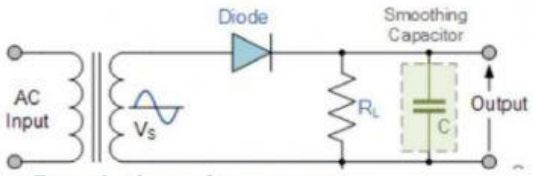
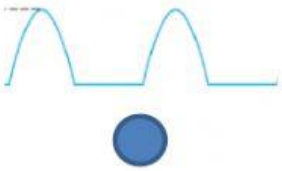
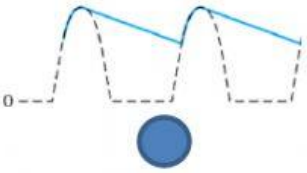
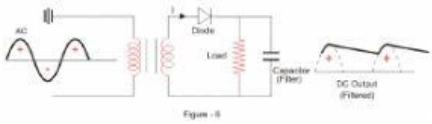
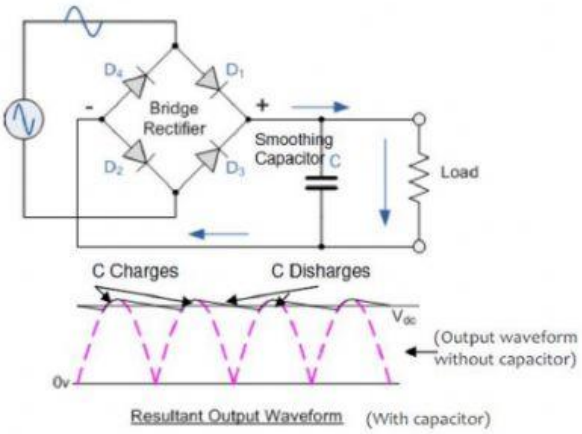
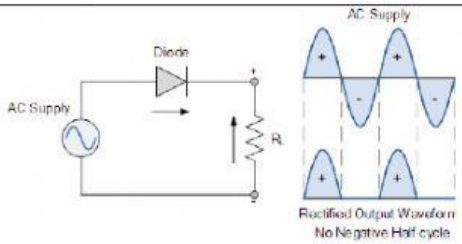
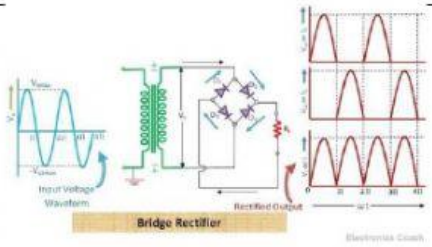
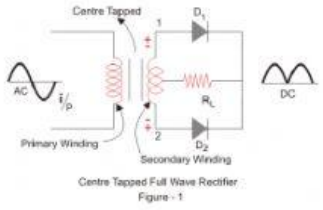


Figure 1with smoothing capacitor





Q2) Match the circuit with its description.

No.	Circuit	No.	Parameter
1			Center tapped transformer full wave rectifier.
2			Full wave rectifier
3			Have wave rectifier with smoothing capacitor
4			Have wave rectifier
5			Full wave rectifier with smoothing capacitor