Government college of Engineering

(An Autonomous Institute of Maharashtra)

CT:-I

Marks:-15 Set(A) Date :- 06/08/15

sub:-EDC (ETU303) Time:-1Hr.

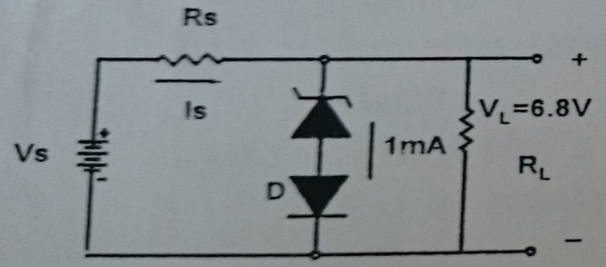
Q1)Solve the following questions.

(A)With the help of circuit diagram explain the working of a half wave rectifier. Show the relevant waveforms. Obtain expression for efficiency of rectification. 5M

(B) A FWR employs two vacuum diodes, the internal resistance of each diode may be assumed constant at 500Ω.Th transformer r,.m s. secondary voltage from centre tap to each of secondary end is 300V and load has a resistance of 2000 Ω.Find (i)d.c.power o/p ii)a.c.power i/p iii) rectification efficiency 5M OR

(C)Design a zener voltage regulator shown in figure to meet following specifications:

Load voltage 6.8V,source voltage Vs is ± 20% and the load current is 30 mA± 50% .The zener requires a minimum current of 1mA to breakdown. The diode D has a forward conducting voltage of 0.6V. 5M



(D) What is the necessity of having filter in power supplies? Explain with diagrams how R-C filter improves the output of rectifiers. 5M OR

(E) Explain working principle of (i) Schottky diode (ii)Tunnel diode .Give their characteristics and typical applications. 5M

$V = \frac{I}{R}$ $V = IR$