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**2nd Sem. / Comp, ECE, I&C, Med. Eltx, Power Eltx.**

**Subject : Basic of Electrical Engg.**

Time : 3 Hrs. M.M. : 100

## SECTION-A

**Note:** Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) Unit of Voltage is _____.

b) Instrument used for measuring current is _____.

c) Rate of doing work in electric circuit is_____.

d) When temperature increases resistance of wire_____.

e) If $R_1$ and $R_2$ are resistance connected in series then total resistance = _____.

f) According to kirchhoff's currenct law the algebraic sum of currents meeting at junction is equal to _____.

g) An ideal voltage source has _____ resistance.







h) In lead Acid battery anode is made of _____.

i) Primary cell can be recharged. True/False.

j) Define M.M.F.

k) Unit of inductance is _____.

l) Flux is measured in _____.

m) Define frequency.

n) Define form factor.

o) In pure inductor current lags behind voltage by a phase angle of _____.

p) Unit of Impedance is _____.

q) Series resonance in R-L-C circuit occur when $X_L$ = _____.

r) Define amplitude of an A.C.

## SECTION-B

**Note:** Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) Give advantage of electric energy over other forms of energy.

ii) Explain kirchhoff's voltage law.

iii) Explain difference between A.C. and D.C.



iv) Define maximum power transfer theorm.

v) Write reactions that take place during charging and discharging at anode and canode in lead acid cell.

vi) Give similarity between electric circuit and magnetic circuit.

vii) Define faraday's laws of electro magnetic induction.

viii) Draw and explain Impedance triangle.

ix) Explain series and parallel connection of resistances.

x) Explain Delta to star conversion.

xi) Explain nickel cadmium cell.

xii) Explain when A.C is applied to pure inductor.

xiii) Explain advantage of Hydro power plant.

xiv) Explain effect of temperature on resistance of a wire or conductor.

xv) Explain kirchoff's current law.





## SECTION-C



**Note:** Long answer type questions. Attempt any three questions. 3x10=30

Q.3 State & explain thevenin theorem with example.

Q.4 An A.C. voltage is given by v=200 sin 31· find. it's amplitude, frequency, time period and value of v when t= 0.005 sec.

Q.5 Draw block diagram of thermal power plant.

Q.6 An A.c voltage of 230V, 50 Hz is applied across a resistance of 100Ω and inductance of 0.1 Henry in series. Calculate impedance of circuit current power factor and power consumed.

Q.7 Explain the concept of Ideal and practical voltage source and current source, their symbolic and graphical representation.