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B.Sc. (Part - I) (Semester - I) Examination, November-2018
ELECTRONICS
Basic Electronics (Paper - I)
Sub. Code : 59666

Day and Date :Saturday, 24 - 11 - 2018 **Total Marks : 50**

Time : 12.00 noon to 2.00 p.m.

Instructions :
1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Draw neat diagrams wherever necessary.**
4) **Use of log table and calculator is allowed.**

Q1) Select most correct alternatives of the following: **[10]**

a) The resistor having colour bands sequence Green, violet and Orange has the resistance Value.

i) 57 ii) 570

iii) 5.7 iv) 57 k

b) Which of the following is passive circuit element _____

i) Resistor ii) Capacitor

iii) Inductor iv) All of these

c) Electromagnetic switch is _____

i) SPST ii) SPDT

iii) DPDT iv) Relay

d) Voltage division rule is applicable to _____ circuit.

i) Ladder ii) Parallel

iii) Series iv) None of these

P.T.O.

e) According to KCL, the algebraic sum of the current at the junction is always _____

i) Positive ii) Negative

iii) Zero iv) None of these

f) In Norton's network, Norton's current is _____

i) open circuit current ii) Short circuit current

iii) Always zero iv) None of these

g) Energy stored in Capacitor, E = _____

i) CV^2 ii) C/V^2

iii) $2\ CV^2$ iv) $1/2\ CV^2$

h) For step-up transformer turns ratio $\frac{N_2}{N_1}$ = _____

i) = 1 ii) > 1

iii) < 1 iv) None of these

i) Fleming's Left hand rule thumb represents direction of _____.

i) Force ii) Field

iii) Current iv) None of these

j) Back e.m.f. produced in armature coil is directly proportional to _____

i) Number of poles ii) flux per pole

iii) Speed of armature iv) All of these

Q2) Attempt any two of the following. **[20]**

a) Give the classification of Capacitors, Explain construction and working of, Aluminium Electrolytic Capacitor.

b) State and explain Kirchhoff's Voltage and Current Laws.

c) Explain Fleming's right hand rule. Determine the magnitude of induced e.m.f. in a conductor placed in magnetic field.

Q3) Attempt any four of the following. **[20]**

a) Give the construction and working of wire wound potentiometer.

b) State principle of transformer, what do you mean by step up and step down-transformer.

c) Give construction and working of electromagnetic relay.

d) Explain Mesh analysis method for DC resistive Circuit.

e) Explain Coulomb's Law in Magnetism.

f) For the circuit shown in figure find the value of R_L for maximum power transfer. Also find the value of this maximum power.