1st Year / Computer Engg
Subject : Fundamentals of Electrical and Electronics engg.

Time : 3 Hrs.   M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory   (6x1=6)

Q.1   The unit of reluctance.   (CO 6)

a)   Ampere Turns /Weber

b)   Weber Turns

c)   Henry

d)   Weber Turns/ Ampere

Q.2   Which of the following is secondary cell?   (CO 7)

a)   Dry cell   b)   Leclanche cell

c)   Voltaic cell   d)   Lead acid cell

Q.3   Ther power factor of pure resistance circuit is

(CO 9)

a)   Zero   b)   Leading

c)   Lagging   d)   Unity

Q.4   Form factor =   (CO 8)

a)   rms value / average value

b)   average value / rms value

c)   rms value /peak value

d)   peak value /rms value

Q.5   Synchronous speed of a 3 phase, 4 pole, 50 Hz induction motor is   (CO 13)

a)   1500 rpm   b)   1440 rpm

c)   3000 rpm   d)   2880 rpm

Q.6   Base of BJT is   (CO 10)

a)   Lightly doped   b)   Heavily doped

c)   Moderately doped   d)   Not doped

SECTION-B

Note: Objective type questions. All questions are compulsory.   (6x1=6)

Q.7   Define instantaneous and average value.   (CO 8)

Q.8   Define admittance.   (CO 9)

Q.9   Which type of chemical reactions takes place in the primary cell.   (CO 7)

Q.10 Define current amplification factor of CB configuration.   (CO 10)

Q.11 Full form of MOSFET   (CO 12)

Q.12 Define power factor.   (CO 9)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions.   (8x4=32)

Q.13 Give five applications of lead acid battery.   (CO 7)

Q.14 Explain the construction of Bipolar transistors.   (CO 10)

Q.15 Define m.m.f., flux and reluctance.   (CO 6)

Q.16 Define Form Factor and Peak Factor of an A.C circuit   (CO 8)

Q.17 Write a short note on A.C motor.   (CO 13)

Q.18 What is the need of stabilization of operating point?

         (CO 11)

Q.19 Explain the construction and operation of FET.

         (CO 12)

Q.20 State working principle of a transformer.   (CO 13)

Q.21 Explain the connection of batteries in parallel with diagram.   (CO7)

Q.22 Write the loses in transformer.   (CO 13)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions.   (2x8=16)

Q.23 Explain Faraday's law of Electromagnetic Induction in detail.   (CO 6)

Q.24 Explain the input and output characteristics of CE configuration. Derive the relation between a and b.

         (CO 10)

Q.25 Explain in detail series RLC ckt in detail.   (CO 9)

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SECTION-A

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(Course Outcome/CO)

Q.1   The point of intersection of d.c. and a.c. load lines represents _____.   (CO-10)

a)   Operating point   b)   Current gain

c)   Voltage gain   d)   None of the above

Q.2   In a transformer the energy is conveyed from primary to secondary.   (CO-13)

a)   Through cooling coil

b)   Through air

c)   By the flux

d)   None of the above

Q.3   In series resonant circuit, the impedence of the circuit is   (CO-9)

a)   Maximum   b)   Minimum

c)   Zero   d)   None of the above

Q.4   Magnitude of current at resonance in R-L-C circuit.   (CO-1)

a)   depends upon the magnitude of R

b)   depends upon the magnitude of L

c)   depends upon the magnitude of C

d)   depends upon the magnitude of R, L and C

Q.5   A JFET is also called _____ transistor.   (CO-12)

a)   Unipolar   b)   Bipolar

c)   Unijunction   d)   None of the above

Q.6   A transistor is a _____ operated device.   (CO-10)

a)   Current   b)   Voltage

c)   Both current and voltage

d)   None of the above

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory.   6x1=6

Q.7 Write the full form of FET.   (CO-10)

Q.8 State the Faraday's law of electro-magnetic induction.   (CO-6)

Q.9 Draw the diagram of batteries in series connection.   (CO-7)

Q.10 Define form factor.   (CO-9)

Q.11 What is the function of starter.   (CO-13)

Q.12 Define flux.   (CO-6)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions.   8x4=32

Q.13 State Faradays law of electromagnetic induction.   (CO-6)

Q.14 State working principle of a transformer.   (CO-13)

Q.15 Explain the power in pure resistance, inductance and capacitance.   (CO-9)

Q.16 Explain the transistor as an amplifier in CE configuration.   (CO-10)

Q.17 Write a short note on working of Solar Cells.   (CO-7)

Q.18 Analogy between electric and magnetic circuits.   (CO-6)

Q.19 Compare a JFET and a bipolar transistor.   (CO-12)

Q.20 Explain the difference between A.C and D.C.   (CO-8)

Q.21 Explain any one biasing method of the transistor.   (CO-11)

Q.22 Define Form Factor and Peak Factor of an A.C. circuit.   (CO-8)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions.   2x8=16

Q.23 Draw the circuit diagram of a transistor of CE configuration. Explain its working.   (CO-10)

Q.24 Explain with diagram the working principle of A.C. Generator.   (CO-13)

Q.25 Explain in detail Lead Acid Battery.   (CO-7)

(**Note:** Course outcome/CO is for office use only)

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SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Unit of MMF is (CO-6)

a) Weber ✓   b) Volt

c) Ampere Turns   d) Ampere

Q.2 In lead acid battery the negative plate is made of (CO-7)

a) Pb   b) $PbSo_4$

c) PbO_2 d) Ni ✓

Q.3 Unit of time period is (CO-8)

a) Second   b) Hertz

c) Henry   d) Tesla

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Q.4 Minimum value of power factor is (CO-9)

a) 1   b) 0 ✓

c) 2   d) -1

Q.5 The frequency of Ac in India is (CO-8)

a) 50hz   b) 100hz ✓

c) 1000hz   d) 10hz

Q.6 Motor converts electrical energy into (CO-13)

a) Chemical energy ✓

b) Nuclear energy

c) Solar energy

d) Mechanical energy

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define Reluctance. (CO-6)

Q.8 Define frequency. (CO-8)

Q.9 Draw the symbol of PNB transistor. (CO-10)

Q.10 Define battery. (CO-7)

(2)

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Q.11 Full form of FET is _____. (CO-12)

Q.12 Define transformer. (CO-13)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Define Faraday's laws of Electro magnetic Induction. (CO-6)

Q.14 Give differences between AC & DC. (CO-8)

Q.15 Explain care and maintenance of lead acid battery. (CO-7)

Q.16 Explain AC applied to pure inductor. (CO-8)

Q.17 Draw power triangle of RL series circuit. (CO-9)

Q.18 Explain conductance and admittance. (CO-9)

Q.19 Explain in brief principle of single phase induction motor. (CO-13)

Q.20 Explain input characteristics of common emitter configuration of transistor. (CO-1)

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Q.21 Explain the need of starter to start DC shunt motor.

Q.22 Explain R-L-C series resonance and value of maximum current and impedance at the time of resonance.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain construction and working of Lead acid battery. (CO-7)

Q.24 Compare JFET, MOSFET and BJT. (CO-12)

Q.25 Explain principle, construction and working of single phase transformer. (CO-13)

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