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Roll No. ..... 180931/170931/120931 /030931/117531/120931/170931

3rd Sem. / Elect. Engg.

Subject : Electrical & Electronics Engg. Materials

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

Q.1 Draw atomic structure of Germanium. (CO-1)

Q.2 The armature core of a.d.c machine is made up of ..... (CO-7)

Q.3 Hard magnetic materials have low permeability and high coercive force. (CO-6)

Q.4 Give full form of C.R.G.O. (CO-5)

Q.5 Name the best suitable material for heating element. (CO-4)

Q.6 Define Resistivity. (CO-2)

Q.7 The process of removing magnetic properties from the magnet is called..... (CO-6)

Q.8 Nichrome is an alloy of.....and chromium. (CO-2)

Q.9 Name any two Soft magnetic materials.(CO-6)

Q.10 Give full form of PVC. (CO-3)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts 10x2=20

Q.11 Give examples of N Type and P Type semiconducting materials. (CO-1)

Q.12 Name any two copper alloys. (CO-2)

Q.13 List materials used for making

i) Motors ii) Choke (CO-7)

Q.14 Define Superconductivity. (CO-2)

Q.15 Name any two liquid insulating materials with applications. (CO-3)

Q.16 What is the full form of HRC Fuse. (CO-5)

Q.17 List two applications of Mercury. (CO-4)

Q.18 Define permeability. (CO-6)

Q.19 Name materials used in soldering. (CO-5)

Q.20 Define Hysteresis Loss. (CO-4)

Q.21 List two applications of asbestos. (CO-3)

Q.22 Define Doping. (CO-1)

SECTION-C

Note: Short answer type questions. Attempt any five questions out of ten. 5x8=40

Q.23 Describe various factors affecting resistivity of conduction materials. (CO-1)

Q.24 Differentiate between hard drawn copper and annealed copper. (CO-2)

Q.25 Classify plastics materials with their properties and applications. (CO-3)

Q.26 Differentiate between N Type and P Type semiconductor. (CO-4)

Q.27 Discuss bundle conductor and write its applications. (CO-5)

Q.28 Explain Gaseous insulating material with properties and applications? (CO-8)

Q.29 Give examples of soft and hard magnetic

materials with their applications. (CO-6)

Q.30 Discuss properties and applications of PVC. (CO-3)

Q.31 Why silicon steel is used for construction of Transformer Core. (CO-7)

Q.32 How Eddy current loss can be minimized. (CO-6)

SECTION-D

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

Q.33 Explain in detail different Electrical properties of insulating materials. (CO-4)

Q.34 Compare conducting, Semiconducting and insulating materials. (CO-1)

Q.35 Write short note on : a) Fuse b) thermocouple. (CO-6)

Q.36 Define hysteresis loop. What are the causes of hysteresis loss? How hysteresis loss can be minimized? (CO-5)

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180932

3rd Sem. / Elect. Engg.

Subject : Non-Conventional Source of Energy

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

Q.1 S. I unit of energy is ..... (CO-1)

Q.2 Solar cell convert solar energy into ..... energy. (CO-2)

Q.3 Write any two application of biogas. (CO-3)

Q.4 Wind mill work on the principal of.....(CO-4)

Q.5 Efficiency of geothermal power plant is more than conventional thermal plant.(T/F) (CO-5)

Q.6 MHD stands For..... (CO-6)

Q.7 Theoretical effeiciency of fuel cell is..... (CO-7)

Q.8 Name the turbine commonly used in tidal power plant. (CO-5)

Q.9 What electrolyte is commonly used in fuel cells?. (CO-7)

Q.10 Suns energy reaches on earth surface in the form of ..... (CO-2)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts 10x2=20

Q.11 Define conventional source of energy (CO-1)

Q.12 Define Green house effect. (CO-2)

Q.13 Write the formula of biomass. (CO-3)

Q.14 Define Wind turbine. (CO-4)

Q.15 Define Geothermal Energy. (CO-5)

Q.16 Define MHD. (CO-6)

Q.17 Write any two applications of fuel cells. (CO-7)

Q.18 Define mini hydel project. (CO-8)

Q.19 Give the two examples of Non-Conventional Energy. (CO-1)

Q.20 Enlist two disadvantage of MHD power generation. (CO-6)

Q.21 Define anaerobic digestion wet process. (CO-3)

Q.22 Define ocean thermal energy conversion system. (CO-5)

SECTION-C

Note: Short answer type questions. Attempt any five questions. 5x8=40

Q.23 Differentiate between Commercial and non-commercial energy. (CO-1)

Q.24 How solar radiations are converted into heat? (CO-2)

Q.25 Discuss power generation by using gasifiers. (CO-3)

Q.26 Explain the basic components of wind energy conversion system. (CO-4)

Q.27 Differentiate between Geothermal Energy and Tidal Energy. (CO-5)

Q.28 Enlist the five advantages of MHD power generation system. (CO-6)

Q.29 Explain working principal of fuel cell. (CO-7)

Q.30 Write a short note on Micro Hydro plants. (CO-8)

Q.31 Explain the various types of prime movers used for geothermal energy conversion. (CO-5)

Q.32 Enlist five disadvantages of Micro Hydro power plant. (CO-8)

SECTION-D

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

Q.33 Explain open Cycle OTEC and close cycle OTEC system in detail with program. (CO-5)

Q.34 Explain the construction and working of photovoltaic cell with diagram. (CO-2)

Q.35 Explain with diagram the construction and working of hydrogen oxygen fuel cell. (CO-7)

Q.36 Explain the various types of wind turbines in detail. (CO-4)

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180933/170933

3rd Sem. / Elect. Engg.

Subject : Electronics - II

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

Q.1 In class B power amplifier, collector current flows for _____ cycle. (CO-1)

Q.2 The last stage of audio amplifier is_____. (CO-1)

Q.3 In series RLC circuit, at resonance, impedance is maximum. (True/False) (CO-2)

Q.4 IC 741 has_____no. of pins. (CO-5)

Q.5 Draw damped Oscillations. (CO-2)

Q.6 SMPS stands for_____ (CO-4)

Q.7 _____feedback is used in amplifiers. (CO-2)

Q.8 To generate square wave, _____ multivibrator is used. (CO-3)

Q.9 Expand CVT (CO-4)

Q.10 For an ideal OP-AMP CMRR should be high. (True/False) (CO-5)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts 10x2=20

Q.11 Why power amplifiers are called large signal amplifiers. (CO-1)

Q.12 Define CMRR. (CO-5)

Q.13 Define Tuned Circuit. (CO-2)

Q.14 Draw input/output waveform of class A amplifier. (CO-1)

Q.15 What is Barkhausen criterion for sustained oscillations. (CO-2)

Q.16 What is Emitter follower circuit. (CO-2)

Q.17 Draw pin diagram of IC 555. (CO-3)

Q.18 Define Slew Rate. (CO-5)

Q.19 Define Load Regulation. (CO-4)

Q.20 Write the expression of voltage gain with positive feedback. (CO-2)

Q.21 Write any two applications of wave-shaping circuits. (CO-3)

Q.22 Why Heat sink is used in power amplifiers? (CO-1)

SECTION-C

Note: Short answer type questions. Attempt any five questions out of ten. 5x8=40

Q.23 Explain the working principal of Complementary - symmetry Push Pull Amplifier. (CO-1)

Q.24 State merits and demerits of negative feedback. (CO-2)

Q.25 Differentiate between voltage Amplifier and power Amplifier. (CO-1)

Q.26 Write a short note on Diode Clipping Circuit. (CO-3)

Q.27 Write a short note on Single tuned voltage amplifier. (CO-2)

Q.28 What is the difference between Oscillator and Alternator? (CO-2)

Q.29 Explain R-C Integrator circuit. (CO-3)

Q.30 Draw and explain the block diagram of regulated power supply. (CO-4)

Q.31 How operational amplifier works as differentiator? (CO-5)

Q.32 Explain the working of R-C phase shift oscillator with the help of circuit diagram. (CO-2)

SECTION-D

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

Q.33 Draw the circuit diagram and explain the working of class-A single ended power amplifier along with its advantages and disadvantages. (CO-1)

Q.34 Discuss the effect of negative feedback on voltage gain, stability, distortion, bandwidth, input impedance and output impedance of an amplifiers. (CO-2)

Q.35 Explain the operation of bistable multi-vibrator with the help of circuit diagram. Briefly mention applications of multi-vibrators also. (CO-3)

Q.36 Write short note on (CO-3)

a) Transistor as switch

b) Series Resonance

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180934/170934/120934
/30934

3rd Sem. / Electrical Engg.

Subject : Electrical Engineering Design and Drawing-1

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 Draw symbols of 15 parts. (CO-1,CO-2)

a) Switch (Closed)
b) Buzzer.
c) Tripple pole MCB
d) Two way switch
e) Variable resistance.
f) Limit switch(NO)
g) Galvanometer
h) Distribution board with switches (Light)
i) Neutral link
j) Battery.
k) Hooter.
l) DC motor
m) Autotransformer.
n) Capacitor
o) Time Delay Relay (TDR)

SECTION-B

Note: attempt all questions.

Q.2 Two lamps, one fan, one bell and one 5 A socket are to be installed in a house. Draw the schematic, wiring and single line diagram for the above installation. (CO-3) (20)

OR

Draw the schematic, wiring and single line diagram for two bells controlled by one push button. By pressing the push button during day time one bell should operate and during night time by pressing the same button the other bell should operate (Use one two way switch in circuit). This circuit is to be used in doctor nursing home.

Q.3 Draw the installation plan and wiring diagram showing locations of energy meter, main switch, star delta starter, 3 phase induction motor etc. for the installation of 3 phase 10 HP induction motor in room size 6mx5m. (CO-5)(20)

Q.4 Draw the half sectional isometric view of pin type insulation for 11 KV shown in Figure no.1. (CO-6) (30)

OR

The isometric view of terminal plate of induction motor is shown in figure 2. draw the following

1) Front view
2) Top view
3) Side view

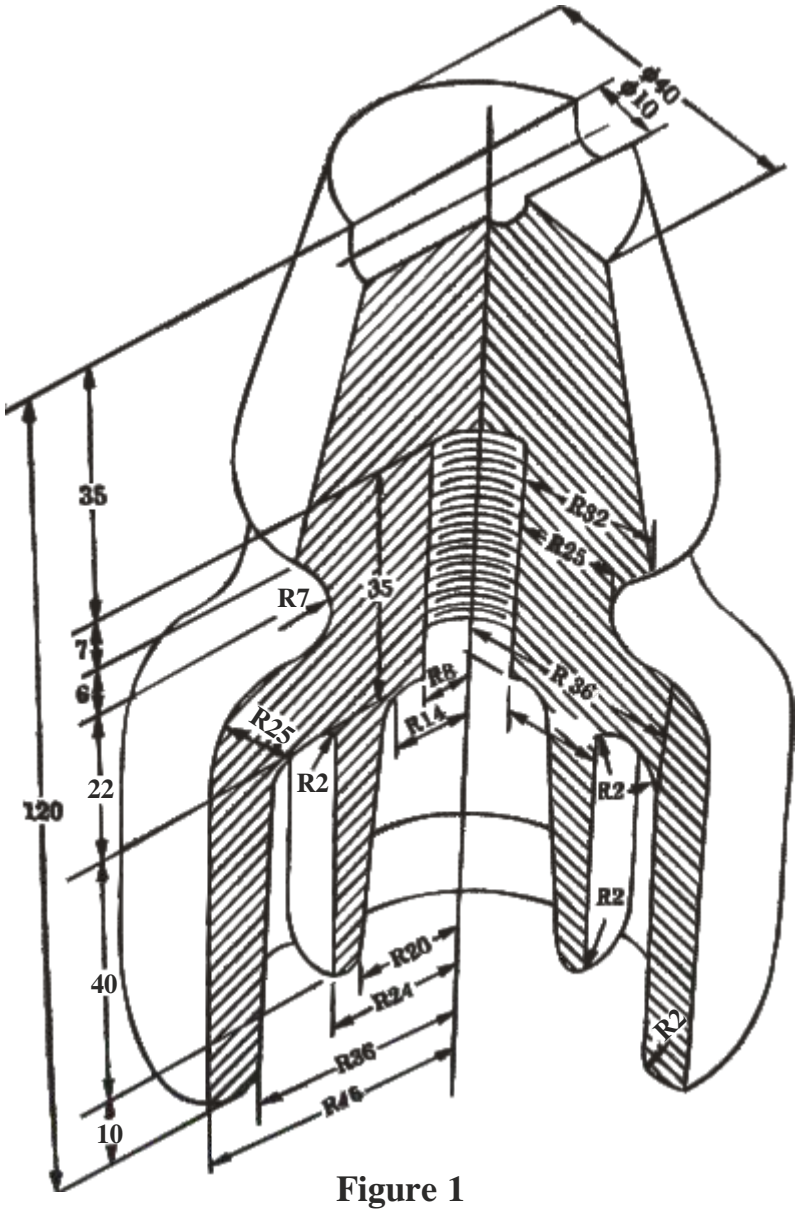

Figure 1

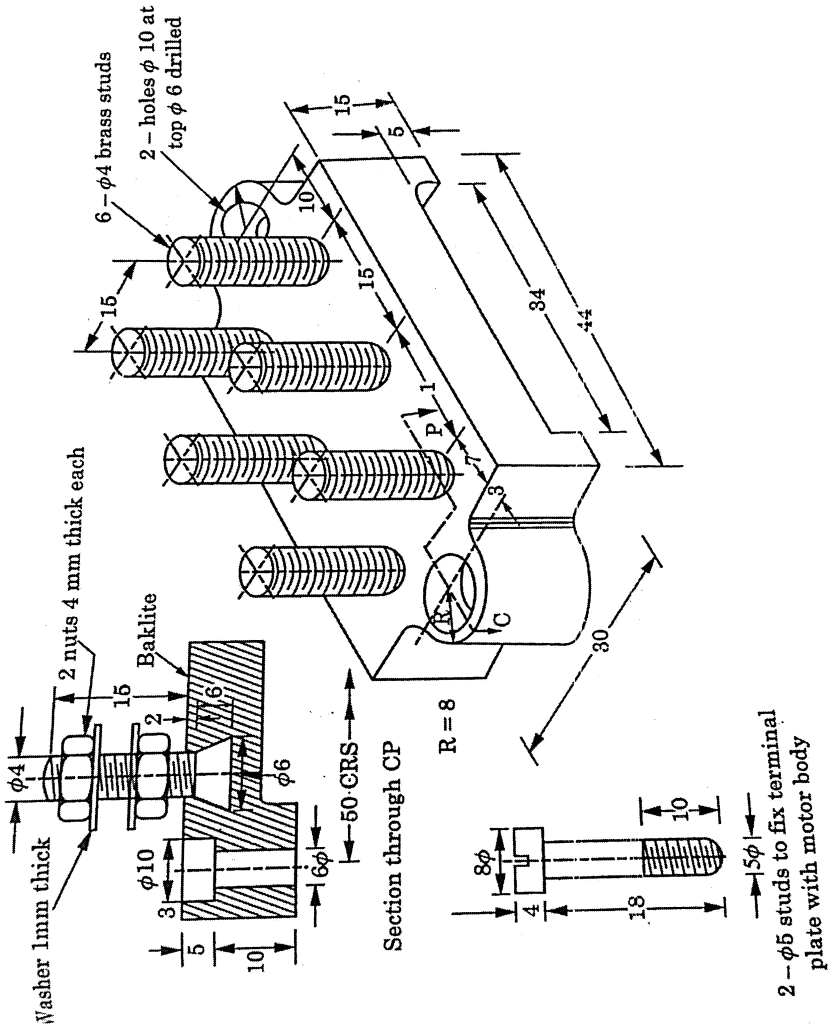

Figure 2

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180935/170935

3rd Sem. / Electrical Engg.

Subject : Estimating & Costing in Elect. Engg.

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

Q.1 A person who prepare estimate is called ..... (CO-1)

Q.2 Define overhead charges. (CO-1)

Q.3 Define price list. (CO-1)

Q.4 Expand ASCR (CO-2)

Q.5 When there is a break in the circuit, this is called ..... fault. (CO-2)

Q.6 The size of conductor is based on _____ capacity. (CO-2)

Q.7 The brass is an alloy of Zink and ..... (CO-2)

Q.8 Define contingencies. (CO-1)

Q.9 A ceiling rose may be of.....plates. (CO-2)

Q.10 Why will stranded conductors are preferred over solid conductor? (CO-3)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts 10x2=20

Q.11 Why conductors is covered with insulation material. (CO-3)

Q.12 What do you mean by comparative statement. (CO-1)

Q.13 Define Earthing. (CO-2)

Q.14 What is the difference between wire & cable? (CO-3)

Q.15 What is the function of stay wire in overhead line? (CO-4)

Q.16 What is the size of earth wire used in Transmission lines? (CO-4)

Q.17 Define Insulator? (CO-4)

Q.18 Define isolator. (CO-4)

Q.19 Define jumpers? (CO-4)

Q.20 What is the maximum number of points in a light / fan subcircuit? (CO-3)

Q.21 What is the maximum number of points in power circuit? (CO-3)

Q.22 What is estimating. (CO-1)

SECTION-C

Note: Short answer type questions. Attempt any five questions. 5x8=40

Q.23 Explain surface conduit wiring. (CO-2)

Q.24 Explain overhead service connection. (CO-4)

Q.25 What do you mean by MCB and ELCB? Why they are used? (CO-2)

Q.26 Earth connections have low resistance. Why? (CO-3)

Q.27 Prepare a specimen tender notice of electrical goods. (CO-5)

Q.28 Explain fixed percentage method for circulation of labour charges. (CO-1)

Q.29 Prepare the performa for supply order. (CO-5)

Q.30 Name the protective devices used in Domestic installation. Draw diagram of any protection device. (CO-2)

Q.31 What do you mean by outdoor and indoor substation. (CO-4)

Q.32 Write the different type of conductor used?(CO-2)

SECTION-D

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

Q.33 Two room of size of each room 4 mtr x 4 mtrs. x 3.5 mtrs .Is required to be provided with electrical points. Marks the location of energy meter, main switch and switch boards suitably and draw the installation plan showing path of each point and wiring diagram, select the size of wire. (CO-3)

Q.34 A small workshop 12x8x6 m to be provided with two three phase 10 hp motors and 5 hp single phase motor. Draw installation plan and single line diagram including starter, main switch and motor switch etc. Prepare material list for installation of three motors. State clearly the assumption made. (CO-3)

Q.35 Prepare material list for giving service connection to a single story building at 230 V, single phase, 50 HZ having a light and fan load of 5kw. The wire is to be drawn from a pole 15meters away from the building.(CO-4)

Q.36 Estimate the material required for pole mounted substation of capacity 200 KVA transformer of rating 11 KV/440 Volts. The HT line is available about 30 meters from the proposed site. (CO-4)

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