E-NOTICE

Date - 16/05/2022

Subject : DIPLOMA ASSIGNMENT QUESTIONS (3RD & 6TH SEM)

ASSIGNMENT QUESTION

DIPLOMA-3RD SEM – CE THEORY

PAPER NAME :CONSTRUCTION MATERIALS

PAPER CODE:CE-PC-301

1. Write short notes on paints and varnishes.
2. Discuss about different types of lime.
3. Write short notes on i) Blast furnace slag cement ii) High alumina cement
4. What do you mean by load bearing wall and partition wall?
5. What is hydration? Factors affecting hydration of cement.
6. Write down about the function of initial ingrefdients of cement.
7. What is painting? Difference between paint and distemper.
8. What is the method to paint an existing surface?
9. What is hardwood and softwood? Explain with example.
10. Write short notes on veneer and plywood.

PAPER NAME :BASIC SURVEYING

PAPER CODE :CEPC302

1. What are WCB & RB?
2. The length of the offset is 15m and the scale of the plan 10m to 1cm.If the offset is laid out 3^0 from it's true direction, find the perpendicular displacement of the plotted point on the paper.
3. What is the principle of chain surveying?
4. What is well & ill conditioned triangle?
5. What are the sources of error in chaining.
6. The sides of a triangle are 12.0,16.5 and 23.0 m. Respectively. Examine whether the triangle is well-conditioned.
7. Write short notes on any four of the following:
    a) Levelling staff
    b) Compensating and cumulative error in chaining
    c) Optical square
    d) Fly levelling

e) Isogonic and agonic lines

PAPER NAME :MECHANICS OF MATERIALS

PAPER CODE :CEPC303

1. How would you find out the moment of inertia of a plane area?
2. State and prove the theorem of perpendicular axis applied to moment of inertia.
3. Describe the method of finding out the moment of inertia of a composite section.
4. State clearly the Hooke's law?
5. Find the radiis of gyration of a body having MOI 20kg-m^2 and mass 4kg..
6. Draw the stress-strain curve of mild steel.

PAPER NAME: BUILDING CONSTRUCTION

PAPER CODE: CEPC-304

1. List out the different types of doors and windows.
2. Write down the classification of shallow foundation and Deep foundation.
3. Write a Short note on Cofferdam.

4.What is the difference between stone masonry and brick masonry.

5.Describe the types of pointing.

6.Write a short note on Rubble masonry

PAPER NAME: CONCRETE TECHNOLOGY
PAPER CODE: CE-PC-305

1. Discuss about Bulking of sand with sketch.
2. Discuss about tests of measurement of workability.
3. The field test of cement. Describe Low heat Portland cement.
4. What are the factors that influence the strength of cement concrete ? Discuss about Finess Modulus.
5. Name some empirical tests to measure workability and explain their suitability?
6. State the chemical composition of cement with percentages and role of each ingredient
7. What is segregation, bleeding,curing?
8. What is flakiness index and elongation index?
9. What is quick setting and hydrophobic, coloured cement?
10. State the chemical composition of cement with percentages and role of each ingredient.
11. What is aggregate abrasion and aggregate crushing value?

PAPER NAME: TRANSPORTATION ENGINEERING
PAPER CODE: CE-PC-307

1. What is an intersection? Explain in detail, the two broad classifications of Intersections

2.What are the types of traffic signs?

3.Distinguish between Cycle and Phase in traffics signal design.

4.What are the advantages and disadvantages of grade separated intersections?

5. Write a short note on Super elevation

6. What is Camber?

DIPLOMA-3RD SEM CE -PRACTICAL

PAPER NAME :CONSTRUCTION MATERIAL LAB
PAPER CODE :CEPC-309S/I

1. How to identify various sizes of available coarse aggregate from sample of 10kg in Laboratory

2. Describes the various types of brick test

3.Identify the types of glasses from the given sample.

PAPER NAME :MECHANICS OF MATERIAL LAB
PAPER CODE :CEPC-309S/II

1. Explain the uses & component of Universal Testing Machine(UTM)

2. Describes the Tension test on mild steel as per IS:432(1)

3.Explain the compression test on sample test piece using compression testing machine .

PAPER NAME :CONCRETE TECHNOLOGY LAB

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Date - 16/05/2022

PAPER CODE :CEPC-309S/III

1.Discuss about the procedure of consistency test of cement.
2.Discuss about the procedure of soundness test of cement.
3.Discuss about the initial setting time test of cement

PAPER NAME :Transportation Engineering Lab
PAPER CODE :CEPC-309S/IV

1. How to determine Flakiness and Elongation Index of aggregate.
2.Write down the Aggregate impact Value test
3. Write down the aggregate crushing value test

DIPLOMA-3RD SEM – ME THEORY
PAPER NAME :MECHANICAL ENGINEERING DRAWING
PAPER CODE:MEPC201

1Draw full sectional front view & side view of a pedestel bearing by considering any suitable data.
2.Sketch neatly sectional front view of a knuckle joint for connecting two 50mm diameter rods. Take other suitable important dimension.
3.Draw the side view & front view of a protective type flange coupling by considering any suitable data.
4. Sketch neatly sectional front view of a Cotter joint for connecting two 40mm diameter rods. Take other suitable important dimension..

PAPER NAME :MECHANICAL ENGINEERING MATERIAL
PAPER CODE:MEPC203

1. Explain the various purpose of heat treatment. What are various method of heat treatment of steel
2. What is re-crystallization? Define re-crystalline temperature. Differentiate between hot and cold working.
3. Describe the method of improving the machinability. Explain the term creep and fatigue.
4. Draw the iron carbon diagram and explain.
5. What is powder metallurgy ? Why it is necessary to use lubricants in the press compacting of powders ? State the advantages and disadvantages of powder metallurgy.
6. Write short notes on the following: (i) ultrasonic test (ii) Nitriding (iii) Cyaniding (iv) Induction Hardening (v) radiography test
7. What is corrosion?Explain the different mechanism of corrosion. Discuss the method of preventing corrosion
8. Describe with neat sketch of one common method used for forming plastic sheets.
9. State the thermoplastic & thermosetting plastic.
10. Characteristic and application of ferrous materials and nonferrous material.
11. Classify carbon steel and their uses.
12. What is stainless steel? Classify the difference types of stainless steel with their properties and application.
13. Write the short notes on (a) Free cutting steels and (b) Spring steels.

Describe the process of steel making by open hearth process.

PAPER NAME :STRENGTH OF MATERIAL
PAPER CODE:MEPC205

1. Define bending moment & shear force at any section of the beam. Explain the term point of contraflexure. Calculate the shear force & bending moment diagram of a simply supported beam carried an udl of w kg/m run for a length of L meter.

2. Draw the shear force & bending moment diagram of a simply supported beam carrying point loads of 10 KN &15 KN at a distance of 2m & 3.5m from the left & right support for a length of 8m of the beam.
3. A steel girder of I-shape cross section has equal flanges each 12 cmx 2cm connected by a web 20cm x 2cm. Determine the moment of inertia of the section about its centroidal axis which is parrel to the web.
4. A load of 20 KN is to be raised with the help of a stel wire. Find the minimum diameter of the wire if the stress is not to exceed 20000 KN/m^2.
5. A boiler is 1.5m in diameter having thickness of plate as 20mm. The efficiencies of the longitudinal joint & circumferential joint are respectively 60% & 80%. If the maximum allowable tensile stress in plate be 70 N/mm^2, calculate the safe steam pressure in the boiler.
6. Define these mechanical properties such as Elasticity, Ductility, Malleability, Hardness, Brittleness, Strength, Creep etc.
7. Classify the different types of beam with proper sketch. classify the different types of loading with proper sketch.
8. For a simply supported steel beam, 6m long & 150mm diameter, what point load should be placed at the mid span to restrict the deflection 10.35mm.Take $E = 2x10^5$ N/mm^2 What will be the slope at the ends.

PAPER NAME :MANUFACTURING PROCESS-I
PAPER CODE:MEPC207

1. Explain different types of gas flame. Explain about Spot welding.
2. Write the specification of shaper.Write the name of different lathe operations.
3. Explain about TIG welding. Explain different welding defects.
4. Explain about brazing and soldering. Write the specification of lathe.
5. Describe about shaper quick return mechanism.
6. What are the difference of shaper and planner.
7. Write the name of various pattern material.
8. Write the name of various type of pattern.
9. What are the factors on which different pattern allowance depends?
10. Write the name of various type of pattern allowance and also explain any one of them.
11. Write various types of casting defects.Write the various properties of moulding sand.

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PAPER NAME :THERMAL ENGINEERING –I
PAPER CODE:MEPC209

1. Drive the Carnot cycle with P-V and T-S diagram
2. What is thermodynamics system? Write down in detail various types of thermodynamics system.
3. What is meant by saturation temperature and saturation pressure?
4. List out the advantages of superheated steam.
5. Show that efficiency of heat engine always less than 100%.
6. What are difference between heat engine , heat pump and refrigerator.
7. Calculated the work done, heat transfer, change of internal energy, change of enthalpy during isentropic process.
8. What is meant by the internal energy of steam?
9. Define the following terms: a) sensible heat of water, b) dryness fraction of steam.
10. Define the following terms: a) latent heat of vaporizations, b) total heat of steam.
11. Calculated the enthalpy of 1kg of steam at a pressure of 8bar and dryness fraction of 0.8. how much heat would be required to raise 2 kg of this steam from water at 20^0C.

DIPLOMA-3RD SEM ME –PRACTICAL

PAPER NAME :MECHANICAL ENGINEERING DRAWING

E-NOTICE

Date - 16/05/2022

PAPER CODE:MEPC211

1. Draw full sectional front view & side view of a pedestel bearing by considering any suitable data.

2. Sketch neatly sectional front view of a knuckle joint for connecting two 50mm diameter rods. Take other suitable important dimension.

3. Draw the side view & front view of a protective type flange coupling by considering any suitable data.

4. Sketch neatly sectional front view of a Cotter joint for connecting two 40mm diameter rods. Take other suitable important dimension.

PAPER NAME :MATERIALS TESTING LAB
PAPER CODE:MEPC213

1. To study Brinell& Vickers hardness testing machine.
2. To study the impact testing machine and perform the izod impact tests.
3. Why impact test is required for material testing? What is notch sensivity?
4. To study the fatigue testing machine and perform rotating beam fatigue test.
5 What is fatigue life? Write short note endurance limit.
6. To study the impact testing machine and perform the charpy impact tests.
7. What is impact energy? Write use of impact properties?

PAPER NAME :THERMAL ENGINEERING-I LABORATORY
PAPER CODE:MEPC215

1. Study of schematic layout of Hydroelectric Power Plant.
2. Study & measurement of calorific value of solid fuel using Bomb Calorimeter.
3. Study of Pressure Gauge and its use.
4. Study and Measurement of Dryness Fraction of Steam by Dryness Fraction Measuring Instrument.
5. Study of Solar Water Heating System.

PAPER NAME :MANUFACTURING PROCESS-I PRACTICE
PAPER CODE:MEPC217

1. How will you obtain neutral, oxidizing and reducing flames using welding torch in gas welding? Compare the merits and demerits of using A.C and D.C for arc welding.
2. Compare TIG welding with MIG welding. Explain submerged arc welding with neat sketch.
3. What do you under standby MIG welding? What are its main advantages?
4. Describe the process of submerged arc welding stating its advantages and limitations. Discuss the method of underwater welding. What are its advantages and disadvantages?
5. Discuss, with the help of neat sketch, the principle of spot welding. Describe various Drilling machine parts.

6. Using neat sketch, describe the principal parts of the milling machine by neat sketches. Explain various types of milling operations using neat sketches.
7. What is indexing? Describe direct indexing, with example.Discuss the methods used for the production of pipes and tubes.
8. Write the name different parts of lathe with sketch. Explain the various steps involved in the investment casting of metals.

E-NOTICE

Date - 16/05/2022

DIPLOMA-3RD SEM EE –THEORY

PAPER NAME :DC MACHINE & TRANSFORMER

PAPER CODE:DCMT

1. Derive the EMF Equation of 3 phase alternator. Define distribution factor and coil span factor?
2. Explain the Star-Delta starter & Direct-On-Line(DOL) starter of 3-phase induction motor with proper diagram.
3. Explain the operation of the different types of stepper motors.
4. (a) Why is short pitch winding preferred over full-pitch winding?
   (b) What is distributed winding?
5. Explain the regenerative Braking of 3-phase induction motor.
   Describe any two methods of determining the voltage regulation of 3-phase Alternator

PAPER NAME :ELECTRICAL CIRCUITS

PAPER CODE:EC

(1) State and prove maximum power transfer theorem for dc network.
(2) What do you mean by transient response and steady State response? Consider a series R-L circuit connected with a dc voltage source. The inductor in the circuit is initially uncharged. Find an expression for the current in the circuit. Also find the value of the time constant.
(3) State and explain Norton theorem.
(4) Draw comparison between electrical and magnetic circuit.
(5) Define resistance, reactance and impedance.
(6) Discuss about Node Analysis & Mesh Analysis.
(7) State and explain superposition theorem.
(8) State and explain KVL& KCL.

PAPER NAME :ELECTRICAL & ELECTRONICS MEASUREMENT

PAPER CODE:EEM

1. What is meant by a filter? Give the classification of the filters. What is the difference between active and passive filter? What are the advantages of an active filter over a passive filter?

2. Give construction and explain working principle of thermocouple. Compare different thermocouple materials. Give the merits and the application of thermocouple.

3. What are the capacitive transducers? What are their advantages and disadvantages? What is the difference between active and passive transducers? Draw the equivalent circuit of piezoelectric crystal and explain its working.

4. What is Digital frequency meter explain.

5. Describe Thermostat plugging and proximity switch.

6. Describe the function of Electromagnetic and turbine flow meter

PAPER NAME :INTRODUCTION TO ELECTRIC GENERATION SYSTEM

E-NOTICE

Date - 16/05/2022

PAPER CODE:IEGS

1. Explain the working of a gas turbine power plant with a schematic diagram.
2. What are the different types of solar plate collector? Discuss in details.
3. Explain the principal of operation of wind power plant. Also discuss its advantages and disadvantages .
4. What are the different working fluids in binary cycle geothermal power plants?
5. Layout and working principle of a Gas turbine power plant.
6. Describe the Nuclear power plant with layout diagram.
7. Layout and working of a Thermal power plant.
8. Explain the construction and working of Solar power plant.
9. What are the different types of tidal power plants?
10. Layout and working principle of a Diesel turbine power plant.
11. Layout of Hydro & Thermal Power Plant.

PAPER NAME : ANALOG & DIGITAL ELECTRONICS
PAPER CODE: ADE

1. Explain Analog signal. What is the difference between Analog & Digital signal?

2. Draw the circuit diagram of Digital to Analog converter & explain it.

3. What do you mean by – Multiplexor & De-Multiplexer operations in Digital Electronics?

4. What is the difference between Logic symbol and truth table of the different logic gates?

5. Briefly explain the difference between the octal and binary number system.

6. What do you mean by Class C & Class AB Amplier with the help of suitable necessary diagrams?

DIPLOMA-3RD SEM EE –PRACTICAL
PAPER NAME :DC MACHINES & TRANSFORMERS LAB
PAPER CODE:LDCMT

1. To perform No-load test and Blocked-rotor test on 3-phase induction motor & draw the equivalent circuit from the two tests.
2. To perform the load test on 3-phase induction motor and to study the performance characteristics of the motor.
3. To control the speed of 3-phase Induction motor by– (i) Frequency changing method, (ii) Pole changing method.
4. To start a 3-phase Slip-ring induction motor by rotor resistance starter and determine the effect of the rotor resistance on the torque-speed curves of an induction motor

PAPER NAME :ELECTRIC CIRCUIT LAB
PAPER CODE:ECL

1. Transient response in R-L and R-C Network: Simulation/hardware

2. Transient response in R-L-C Series & Parallel circuits Network: Simulation/hardware
3. Determination of Impedance (Z) and Admittance(Y) parameters of two port network
4. Frequency response of LP and HP filters
5. Frequency response of BP and BR filters

PAPER NAME :ELECTRICAL & ELECTRONIC MEASUREMENT LAB
PAPER CODE:EEML

1. To measure Linear displacement by LVDT & plot characteristics.
2. To measure displacement by Strain gauge & plot characteristics.
3. To measure temperature by pt-100, thermistor and thermocouple along with simple resistance bridge.
4. To plot characteristics of potentiometer and observe the loading effect on output of potentiometer.

PAPER NAME :INTRODUCTION TO ELECTRIC GENERATION SYSTEM LAB
PAPER CODE:IEGSL

1. To study the supply system of 6.6 KV/400V sub-station to a housing complex using slides/model.
2. To study various types of turbine used in Power station using slides/models.
3. To study different types of excitation system for alternator using slides/models.
4. To study different kinds of insulators (Insulators are required to be available in laboratory)

PAPER NAME : ANALOG & DIGITAL ELECTRONICS LAB
PAPER CODE: LADE

1. Plot the characteristics of Zener diode
2. Study the characteristics of JFET
3. Study the input & output characteristics BJT for CE configuration.
4. Realization of Half Adder, Full Adder, Half Subtractor and Full Subtractor.
5. Verification of the function of SR, D, JK and T Flip-flops.
6. Study the half & full wave rectifiers.
7. Realization of a decoder circuit using basic gates and to verify IC 74LS139

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DIPLOMA-3RD SEM CST–THEORY

PAPER NAME :COMPUTER PROGRAMMING IN C

PAPER CODE:COPC201

1. Define array. Explain different types of array in detail.

2. What will be the value of the variables at the end in each of the following code statements:
   1. int a=4^4
   2. int a=23.34
   3. a = 10 b = a + a++
   4. a=-5

      b=-a

3. What is the difference between malloc() and calloc()?
4. State and explain various types of standard function with example.
5. Define structure and union. Explain the way of declaring and accessing them.

PAPER NAME :SCRIPTING LANGUAGE PYTHON

PAPER CODE:COPC203

1. What is Python? Explain the benefits of using Python.
2. What are lists and tuples? Explain the key difference between the two with example.
3. Describe about modules and packages in Python.
4. Explain Python namespaces? difference between xrange and range in Python?
5. Define pandasdataframe. Explain the steps to create 1D, 2D and 3D arrays.

PAPER NAME :DATA STRUCTURES

PAPER CODE:COPC205

1. Explain modular programming with suitable example.
2. Compare a Singly linked list and Doubly Linked List.
3. Differentiate between top down and bottom up approach of problem solving.
4. Write an algorithm/pseudocode to convert a given infix expression to postfix expression? Trace the steps involved in converting the given infix expression((A +B)^C)-((D*C)/F) to postfix expression.
5. Define hashing, hash function and collision.

PAPER NAME :COMPUTER SYSTEM ORGANIZATION

PAPER CODE:COPC207

1. Explain different types of mapping technique used cache memory. Differentiate virtual memory and cache memory.
2. Describe the IEEE format also.
3. What are the major characteristics of RISC architecture?by RISC architecture is more suitable for pipeline implementation-explain.
4. Differentiate programmed IO and Interrupt briefly.
5. Explain the representation of floating point number in computer.

PAPER NAME :ALGORITHMS

PAPER CODE:COPC209

1. Write a routine to implement the queue (insertion and deletion) using linked list.
2. Write an algorithm to reverse a linked list.
3. Design an algorithm that find minimal spanning tree in polynomial Time.
4. Represent the sparse matrix using link list.
5. Explain the algorithm of merge sort with example.

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DIPLOMA-3RD SEM CST–PRACTICAL

PAPER NAME :COMPUTER PROGRAMMING LAB

PAPER CODE:COPC211

1. Write a C program that accepts the salary and age from the user and displays the same on the screen as output.
2. Write a program to generate the following pattern.

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3.Write a C program that accepts the salary and age from the user and displays the same on the screen as output.

4. Write a C program to find the area and perimeter of a circle.

5. Write a C program to print Fibonacci series using recursion.

PAPER NAME :SCRIPTING LANGUAGE PYTHON (LAB)

PAPER CODE:COPC213

1. Write a Python program which accepts the user's first and last name and print them in reverse order with a space between them.
2. Python – Swap elements in String list.
3. Different ways to clear a list in Python.
4. Write a Python program to check if element exists in list.
5. Write a Python program to count the number 4 in a given list.

PAPER NAME :DATA STRUCTURES LAB

PAPER CODE:COPC215

1. To write a program to Implementation of PUSH & POP operations
2. To create a 2D array of numbers and calculate & display the row & column sum and the grand total.

3. Suppose you are given with the in-order and pre-order sequence of a binary

tree.

In-order:	B	C	A	E	D	G	H	F	J
Pre-order:	A	B	C	D	E	F	G	H	J

Construct the binary tree from these two.

4. Write think binary search method can be used to insert elements into its correct place in the destination list.
5. Write a program to check whether a word is palindrome or not.

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DIPLOMA-6TH SEM-CST-THEORY

PAPER NAME: ADVANCED JAVA PROGRAMMING
PAPER CODE: AJP

1. Differences between awt and swing components.
2. Briefly describe servlet life cycle.Describe function of each method. When doGet() and doPost() method is called.
3. Explain Radio button.
4. Give java examples to demonstrate encryption.
5. Explain the RMI architecture and discuss the implementation issues.

PAPER NAME :DIGITAL IMAGE PROCESSING
PAPER CODE: DIP

1. Explain how aliasing errors can be eliminated.
2. Define the terms brightness, contrast, hue and saturation with respect to a digital image.
3. Explain the terms False contouring and Mach band effect.
4. Explain the energy compaction property of DCT.
5. Distinguish between image enhancement and image restoration with example

PAPER NAME :SYSTEM PROGRAMMING & COMPILER DESIGN
PAPER CODE: SPCD

1. Discuss the major data structures used and their organization in an assembler.
2. Make comparison between one-pass assembler and two-pass assembler.
3. Explain the concept of syntax-directed definition.
4. Explain the major data structure of macro processor with example.
5. Explain the functions performed by loader briefly

PAPER NAME: INDUSTRIAL MANAGEMENT
PAPER CODE: IM

1) What is Management? Is that a Art or Science
2) Discuss the three levels of management
3) Discuss main characteristics of Management
4) Stat few functions of Human Resource Department?
5) What is leadership?

DIPLOMA-5TH SEM-CST-PRACTICAL

PAPER NAME :ADVANCED JAVA PROGRAMMING(LAB)
PAPER CODE: LAJP

1. In which package are most of the AWT events that support the event-delegation model defined! What is the advantage of the event-delegation model over the earlier event-inheritance model.
2. Write down a code to implement multithreaded message server and client program.

3. Give java examples to demonstrate encryption.
4. Write a simple swing program to display string with jframe and jpanel.
5. Illustrate with suitable example of how applet-applet and applet-servlet could be enabled.

PAPER NAME :SYSTEM PROGRAMMING & COMPILER DESIGN(LAB)
PAPER CODE: LSPCD

1. Make comparison between one-pass assembler and two-pass assembler.
2. Explain, with a neat diagram, the phases of a compiler.
3. xplain the left recursion and show how it is eliminated. Describe the algorithm used for eliminating the left recursion.
4. Discuss any type of top-down parsing with example. c) Explain with example Non-recursive Predictive parsing (LL).
5. Write down the function performed by lexical analyzer. What do you mean by regular expression?

PAPER NAME: DIGITAL IMAGE PROCESSING(LAB)
PAPER CODE: LDIP

1. Perform KL transform on the following matrix.
   $x = \begin{bmatrix} 4 & -2 \\ -1 & 3 \end{bmatrix}$
2. State and prove the convolution property of 2D DFT.
3. Find the DCT of the sequence x(n) = {11,22,33,44}.
4. Explain the energy compaction property of DCT.
5. Explain the active contour algorithm for image segmentation.

DIPLOMA-6TH SEM-EE-THEORY

PAPER NAME: CONTROL OF ELECTRICAL MACHINE
PAPER CODE:CEM

1. Draw the two speed two winding control circuit of an induction motor and explain.
2. Write down the function of each part of PLC.
3. Develop ladder logic diagram for star-delta starter and explain the working.
4. Draw a neat sketch of Pneumatic timer and explain principle of operation.
5. Draw and explain the control circuit of definite time acceleration starter with field Failure protection and field acceleration protection arrangements.
6. Write down the principle of design of motor control circuit.

PAPER NAME: ELECTRICAL DESIGN, ESTIMATION & COSTING
PAPER CODE: EDEC

1. What are the functions of conservator and breather in transformer?
2. State the factors, governing the amount of illumination at a particular place and the necessary point to be kept in view for executing schemes.
3. Explain utilization factor and depreciation factor used in connection with lighting scheme.

4. Write short notes on (i) transformer bushings (ii) transformer tapping.
5. Write short notes on any one (i) transformer bushings (ii) transformer tapping.
6. What type of wiring would you recommend for mechanical workshop? Give reasons in support of your answer.

PAPER NAME: ELECTRICAL INSTALLATION, MAINTENANCE AND TESTING
PAPER CODE: EIMT

1. Discuss various factors affecting line of insulating materials.
2. Describe any one method of measuring temperature of internal parts of windings.
3. How to prevent rusting of steel poles?
4. What are the inspection checks are to be carried out on OH lines before energizing?
5. a) What is maintenance? What are the different types of maintenance?
   b) Discuss any one of the above maintenance.
6. Discuss various factors affecting line of insulating materials.

PAPER NAME :INDUSTRIAL MANAGEMENT
PAPER CODE : IM

1) What is Management? Is that a Art or Science
2) Discuss the three levels of management
3) Discuss main characteristics of Management
4) Stat few functions of Human Resource Department?
5) What is leadership?

DIPLOMA-6TH SEM-EE-PRACTICAL

PAPER NAME: CONTROL OF ELECTRICAL MACHINE LAB
PAPER CODE:LCEM

1. To study control components - Electromagnetic contactor, Thermal overload relay, Timer (OFF delay,On delay), Push button Switches, Solenoid valve, MCB.
2. To make & test the control and power circuit for Jogging operation, forward & reverse rotation of Sq.cage induction motor using contactor control.
3. To make & test the control and power circuit for fully-automatic star-delta starter operation of cage induction motor using contactor control.
4. To make & test the control circuit for dynamic braking operation of induction motor using contactor control.
5. To make & test the control circuit operation of automatic star-delta starter of induction motor usingPLC.

PAPER NAME: ELECTRICAL DESIGN, ESTIMATION & COSTING LAB
PAPER CODE: LEDEC

1. Draw Single line diagram and layout plan of 11KV indoor Substation.
2. Draw Sectional Drawing of different types of cables, overhead conductors.
3. Draw Sectional Drawing of different types of insulators.
4. Draw Core construction, H.T. & L.T. winding, other accessories of 3 phase transformer.
5. Draw pole, yoke , field coils, commutator and its details of D.C. Machine.

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PAPER NAME: ELECTRICAL WORKSHOP - II LAB
PAPER CODE: LEW-II

1. To Demonstrate various components of D.O.L., Star-Delta and Auto Transformer Starter.
2. To prepare a report on specifications of earthing at different substations/different locations& new trends in earthing schemes.
3. To prepare trouble-shooting chart & carry out maintenance of a single and three phase transformers.
4. To prepare trouble-shooting chart & carry out maintenance of single and three phaseinduction motors.
5. To prepare trouble-shooting chart for HV and LV Switch Gear

PAPER NAME: INDUSTRIAL PROJECT
PAPER CODE:LIP

1. Write project report on (i) Design of Rural Electrification Scheme for small

Village, Colony. (ii) Energy Conservation and Audit. (iii) Substation Model (Scaled)

(iv) Wind Turbine Model (Scaled) (v) Pole Mounted Substation Model

2. Write project report on (i) Rewinding of Three Phase/Single Phase

Induction Motor. (ii) Rewinding of Single Phase Transformer.

(iii) Fabrication of Inverter up to 1000 VA. (iv) Fabrication of Battery Charger.

(v) Fabrication of Small Wind Energy System for Battery Charging.

PAPER NAME : PROFESSIONAL PRACTICE – IV
PAPER CODE :LPP-IV

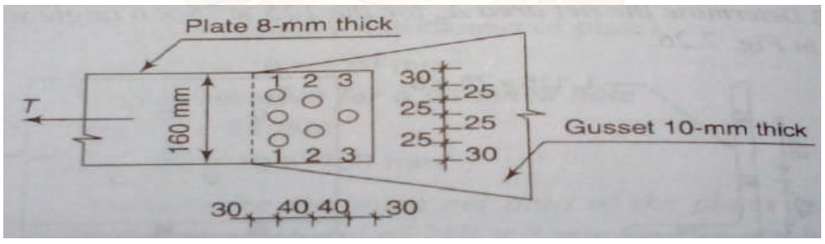
1. Prepare notes for given topic on thermal / Hydel power generating station.
2. To prepare a report on Railway / metro railway signaling system.
3. To prepare &Interact with peers to share thoughts protection system in a large industry.
4. A briefreport to be submitted onAutomobile pollution, norms of pollution control.
5. Acquire information from different sources& write about Testing of switchgear.

DIPLOMA-6TH SEM-CE-THEORY
PAPER NAME: CONSTRUCTION AND DISASTER MANAGEMENT
PAPER CODE:CDM

1. How many types of network diagrams are there? Explain them.
2. Explain Rate analysis. What do you mean by crash cost.
3. What are charts? Enumerate the various types of chart with graphical representation.
4. Write about the contracting of network.
5. Write a short note-
   a. Slack b. Forward plans
6. Distinguish between Amount put to tender and tender amount.
7. What are the factors to be considered while planning the rebuilding works after a major disaster due to flood /cyclone/earthquake
8. Differentiate natural disaster and manmade disasters with examples.
9. What is plinth area and cubic rate estimate?
10. Explain' Work Break Down' structure.

PAPER NAME: DESIGN OF STEEL STRUCTURE
PAPER CODE: DSS

1. Design a built up column 15m long to carry factored axial load of 1180KN.the column is restrained in position but not in direction at both the ends. Provide single lacing system with bolted connections. Assume steel of grade fe410 and bolts of grade4.6.design the column with two channels placed back to back.
2. Design a single angle discontinuous strut to carry a factored axial compressive load of 65KN.the length of strut is 3m between intersections. It is connected to 12mm thick gusset plate by 20mm diameter 4.6 grade bolts. Use steel of grade Fe410.
3. How shear value, bearing value and tearing value related to riveted connection is calculated?
4. Define slenderness ratio. State its values as per is 800.
5. What is batten and lacing? Draw a figure for each.
6. Define ductility factor and shear lag factor of tension members.
7. Design a lap joint to connect two plates 300mm wide and 16mm thick using 20mm diameter bolts of grade4.6the applied service load is 470KN.
8. Write the design procedure of Tension member
9. What are the assumptions in the riveted joint theory?
10. Determine the design tensile strength of plate (160x8mm) connected to 10mm thick gusset using 16mm bolts, as shown fig, if the yield and the ultimate stress of steel used are 250 Mpa and 410 Mpa respectively.



11. Write design procedure of truss member.

PAPER NAME:ENVIORNMENTAL ENGINEERING
PAPER CODE: EE

1. What is activated sludge? Describe activated sludge process with line diagram.
2. Draw the flowchart of purification of water supplies and describe the each method in brief.
3. What is COD? What is dissolved oxygen? How is these two related?
4. What is Turbidity, Hardness, pH, Eutrophication?
5. What is mass curve method? Where is it used? Draw the neat sketch of a stop cock.
6. Write short notes on acid rain and green house gases and its effects.
7. Give the comparative detail between slow sand filter rapid sand filter.
8. What is aquifer? What are the types and define every type. What is conjunctive use of water?
9. What are the various types of sewers and various systems of sewerage?
10. What are DPR and EIA? Write down some points regarding the EIA of mining project.

PAPER NAME:WATER RESOURCES MANAGEMENT
PAPER CODE: WRM

1. Discuss about types of precipitation.
2. Define about terms Aquifer, confined Aquifer, Aquicludes, Aquifuges.
3. Define terms berm, canal bank,hydraulic gradient, free board.
4. Describe with a neat sketch the working of a float type rain gauge.

5. What are the open wells? Explain with a sketch constant level pumping test
6. explain mass curve analysis, explain with sketches.
7. Enumerate the systems of flood forecasting.
8. Write a short note on decry's law of measuring velocity of ground water.
9. What is the necessity of temperature control is gravity dam?
10. Describe the method of watershed management.

DIPLOMA-6TH SEM-CE-PRACTICAL

PAPER NAME:CIVIL ENGINEERING LAB-IV
PAPER CODE: CEL-IV

1.Write down the procedure of determine the hardness of water.
2.Write down the procedure of determine the residual chlorine water.
3.write down the procedure of determine of turbidity of water.

PAPER NAME:FIELD SURVEY PRACTICE -II
PAPER CODE: FSP-II

1.Write down the procedure of taking reding and measurement in the field book.
2.Write down about different types of curves with sketches.

PAPER NAME:PROFESSIONAL PRACTICE-IV
PAPER CODE: LPP-IV

1.Write about sewage treatment plant with sketch.
2.Write about contract management.

PAPER NAME:RURAL ENGINEERING
PAPER CODE: LRE

1.Write down steps about manufacturing of brick.
2.Discuss about canal head works with sketch.
3.Write down about Indira AwasYojna

DIPLOMA-6TH SEM-ME-THEORY

PAPER NAME: DESIGN OF MACHINE ELEMENT
PAPER CODE: DME

1. Define Stress Concentration. State the Method By which we reduce the effect of Stress concentration.What are the General Considerations in Machine Design.State the Classification of machine Design in Brief.
2. A cotter joint is required to resist an axial load of 60 KN. Design the joint completely. Assume σ_t = 80MPa, τ= 50MPa, σ_{cr}= 150MPa. Distinguish between cotter joint and knuckle joint.
3. What is a lever? Explain the principle on which it works?State the applications of hand and foot levers. Discuss the procedure for designing the hand and foot levers.
4. Design and make a neat dimensioned sketch of a muff coupling which is used to connect two steel shafts transmitting 40KW at 350 rpm. The material for the shafts and key is plain carbon steel for which allowable shear crushing stresses may be taken as 40 MPa and 80 MPa respectively. The material for muff is cast iron for which the allowable shear stress may be assumed as 15 MPa.State the Purpose of Shaft Coupling.

E-NOTICE

Date - 16/05/2022

PAPER NAME: FLUID POWER
PAPER CODE :FP

1. a. Explain the merits & demerits of the three types of hydrostatic type of hydraulic circuits versus pneumatic circuit.
   b. Why is a relief valve used in a hydraulic circuit? Explain its working with the help of a diagram.
2. a. What is the difference between the terms fluid power & hydraulics & pneumatics?
   b. Compare the use of fluid power to a mechanical system by listing the advantages & disadvantages each.
3. a. What is a positive displacement pump? In what ways does it differ from a centrifugal pump.
   b. A gear pump has a 75mm outside diameter ,50mm inside diameter & 25mm width. If the volumetric efficiency is 90 % at rated pressure, what is the corresponding actual flow rate? Take pump speed as 1000 r.p.m.
4. a. What is a 3-way & 4-way direction control valve. Explain with a neat sketch.
   c. What is a pressure reducing valve? What is its purpose?
5. a. Explain the principle of a balanced design of vane pump.
   b. What type of pumps are available in variable displacement design.
6. a. How does a pilot check valve differ from a simple check valve.
   b. A hydraulic motor has a 82 cm^3 volumetric displacement. If it has a pressure rating of 70 bars & it receives oil of 0.0006 m^3/s from a theoretical flow rate pump find the speed , theoretical torque, theoretical power of motor.
7. a. Differentiate between compensated & non compensated flow control valve.
   b. State the construction & working function of meter in & meter out circuit in fluid flow.
8. a. Draw the flow diagram circuit of pressure intensifier and explain it.
   b. Explain the function of - linear actuator, hydraulic motor, direction control valve.
9. a. What is a hydraulic filter? What function does it serve in a hydraulic circuit? What are The common materials used for hydraulic filter?
   b. Write a brief note on hydraulic piping used in a hydraulic circuit .
10. a. List out the characteristic properties of hydraulic fluids. What are the common hydraulic fluids used in practice.
    Give the schematic diagram of a direction control valve. Explain how it works.
11. a. Explain the merits & demerits of the three types of hydrostatic type of hydraulic circuits in use.
    b. Why is a relief valve used in a hydraulic circuit? Explain its working with the help of a Diagram.

PAPER NAME: PRODUCTION MANAGEMENT
PAPER CODE: PM

1. What are roles of suppliers and customer in JIT system
2. What are steps for ISO 9000 registration .
3. Describe the five step road map for implementing six-sigma.
4. What are requirement for planning preventive maintenance?
5. Write short note on (a) Total Productive maintenance (b) breakdown maintenance.
6. How the standard time of maintenance is calculated.Define motion study .state the different charts which are used for motion study.
7. 7How work measurement is done?.
8. Write a short note on Gantt chart and Line balancing.What do you mean by dispatching ? Describe the importance of follow up section .

9. Define production control. What are different techniques of production technique..State the functions Estimating Department .Explain inventory managnment.
10. Write a short note on Automated guided vehicles systems.
11. Write a short notes on (a) Margin of safety , (b) Angle of incidence
12. Explain the different material handling equipments.

PAPER NAME :REFRIGERATION AND AIR CONDITIONING
PAPER CODE: RAC

1. Describe the C.O.P of refrigerator and heat pump. Obtain the relation between them.
2. Discuss the deviation of actual vapour compression cycle from simple theoretical cycle .
3. Differentiate between Air Cooled Condenser and Water cooled Condenser.
4. 28 tonnes of ice from at 0° C is produced per day is an refrigerator. The temperature range in the compressor is from 25 ^{o} C to -15 ^{o} C. The vapour is dry and saturated at the end of compression and an expansion valve is used . Assuming a coefficient of performance of 62% of the theoretical , Calculate the power required to drive the compressor. use R-12 as refrigerant.
5. Explain with neat sketch the 'Electrolux refrigerator with working and principle. '
6. Define the Psychometric? Explain the Dalton's law of Partial Pressures
7. Ennumerate and explain in short the points should be considered while making the heat load calculation .
8. Classify the Air Conditioning system . Explains any one.
9. Explain the method of installation of refrigeration system in car.
10. Write short note on various types of compressors. Explain any one with neat sketch.
11. Define Refrigerant. State desirable properties of an Idle refrigerant.
12. Explain heat rejection factor for the case of a condenser. State the basic function of a Expansion device.
13. With a neat sketch explain the working principle of Bell-Coleman cycle for air refrigeration. Draw P-V and T-s diagram.
14. Describe briefly any two of the following processes a) sensible heating b) sensible Cooling c) Heating & humidification
15. A refrigeration system operates on the reversed Carnot cycle. The higher temperature of the refrigerant in the system is 25° C and lower temperature is -5° C. The capacity is to be 6tonnes. neglect all losses. Determine, a)Coefficient of performance. b) Heat rejected from the system per hour, c)power required.
16. What are the desirable properties of refrigerants? Explain name at least five commercial refrigerants.
17. Compare reciprocating compressor with a rotary compressor.
18. Describe the construction and working principle of a vane-type compressor.

PAPER NAME :INDUSTRIAL MANAGEMENT
PAPER CODE: IM

1) What is Management? Is that a Art or Science
2) Discuss the three levels of management
3) Discuss main characteristics of Management
4) Stat few functions of Human Resource Department?
5) What is leadership?

DIPLOMA-6TH SEM-ME-PRACTICAL

PAPER NAME: FLUID POWER LAB
PAPER CODE: LFP

1. Give a schematic diagram for a hydraulic circuit in conventional milling machine.

Compare the use of fluid power to a mechanical system by listing the advantages & disadvantages each

2. What is a 3-way & 4-way direction control valve. Explain with a neat sketch. What is a pressure reducing valve? What is its purpose?
3. Explain the difference between hydraulic motor & hydraulic pump. What type of pumps are available in variable displacement design.
4. Enumerate advantages & disadvantages between rotary & reciprocating compressor.
5. What is a hydraulic filter? What function does it serve in a hydraulic circuit? What are the common materials used for hydraulic filter?

PAPER NAME: REFRIGERATION & AIRCONDITIONING LAB
PAPER CODE :LRAC

1. Determine COP of vapour compression refrigeration system. Define wet compression and dry compression. Explain how effect of changes in evaporator pressure and condenser pressure.
2. Write all component, working principle details about room Air conditioner. Define summer air conditioning and winter air conditioning. State central air conditioning system.
3. Write all components, working principle details about Domestic Refrigerator. Why ammonia and hydrogen fluid is used in domestic refrigerator? Write advantages of domestic refrigerator over conventional refrigerator.

PAPER NAME: DESIGN OF MACHINE ELEMENT LAB
PAPER CODE :LDME

1. A 15 KW , 960 rpm motor has a mild steel shaft of 40 mm diameter and the extension being 75 mm . The permissible shear and crushing stresses for the mild steel key are 56 MPa and 112 MPa. Design the keyway in the motor shaft extension. Check the shear strength of the key against the normal strength of the shaft. Explain the term 'Effect of keyways'
2. Define Ergonomics, also state its advantage. State the functions Estimating Department.
3. Explain the process of general costing method any components.

By Order, Authorised Signatory