Code No: 3519/CBCS

FACULTY OF ENGINEERING

B.E (Civil) III Semester (CBCS) (Main) Examination, March / April 2022

Subject: Building Materials and Construction

Time: 3 Hours **Max marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: **Answer all questions**. **(10 x 2 = 20 Marks)**

1 Discuss the general principles in Brick Masonry Construction?

2 Define Form work and Scaffolding?

3 Define Bulking of sand.

4 What is meant by voids in fine aggregate? How is it measured?

5 State the methods of quarrying?

6 Enumerate various types of cement

7 What are the properties of good coarse aggregate?

8 Mention methods for fire control

9 Distinguish random rubble masonry and coursed rubble masonry.

10 List various types of paints.

PART – B

Note: **Answer any five questions**. **(5 x 10 = 50 Marks)**

11. (a) What are the harmful ingredients in brick and explain them.
(b) Enumerate the principal reasons for decaying timber.

12. (a) Explain in brief about adsorption and moisture content of aggregate.
(b) Describe in detail different types of mortars.

13. (a) Explain the classification of aggregate. Mention different tests for aggregates
(b) Differentiate between OPC and PPC

14. (a) Write in detail about the applications of using Green Building Materials in Construction.
(b) What is damp proofing? Discuss the materials used.

15. (a) Explain about distempering and painting.
(b) Discuss in detail Fire protection in buildings.

16. Describe the various types of expansion joints, construction joints and their use in construction.

17. Write short notes on any Two of the following
(a) Dressing and polishing of stones
(b) Use of recycled materials
(c) Elastic deformation.

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Code No. D-3527/CBCS

FACULTY OF ENGINEERING

B.E. (EEE/EIE) III - Semester (CBCS) Examination, March / April 2022

Subject: Digital Electronics and Logic Design

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1 Convert decimal 628 to Octal and Hexadecimal.
2 Convert the following to excess 3 code (i) 110 (ii) 1011.
3 State Commutative law of Boolean algebra.
4 Draw AND gate symbol and write its truth table.
5 What is the difference between flip flop and latch?
6 What is noise margin?
7 Convert the S-R to J-K flip flop.
8 What do you mean by excitation table?
9 Define resolution of A/D converter.
10 Find the 2's complement of 00110101.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11 (a) Explain in detail about carry look ahead adder.
(b) Explain the working of TTL NAND gate.

12 (a) Compare synchronous and asynchronous sequential logic circuits.
(b) Minimize the four variable logic function using K Map
F(A,B,C,D) = Σm(0,1,2,5,7,8,9,11,14).

13 Reduce the following expression using K-map
(a) $A\overline{B}C + \overline{A}B\overline{C} + B\overline{C}$
(b) $A\overline{B}C + B + AB\overline{D} + A\overline{C}$.

14 Explain in detail about Up/down counters.

15 Discuss the principles of operation of (i) Simple weighted binary DAC
(ii) DAC using R-2R ladder network.

16 Explain in detail about Multiplexer and Demultiplexer.

17 Explain about (a) Debouncing switch (b) Law of Boolean algebra.

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Code No. D-3533/CBCS

FACULTY OF ENGINEERING

B.E. (ECE) III - Semester (CBCS) Examination, March / April 2022

Subject: Network Analysis and Synthesis

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1 Define iterative image impedance of a asymmetric network.
2 In a symmetrical T-network, the total series arm impedance is 10 ohm and shunt arm impedance is 10 ohm. Find its characteristic impedance.
3 What are the advantages of m – derived filters over constant k filter?
4 What is notch filter? Mention its application.
5 What are different types of Network synthesis?
6 Write the two properties of RL impedance function.
7 When the network function is said to be stable?
8 Explain and draw the Laplace transformer of inductance.
9 Explain about Lattice equalizer.
10 Draw the asymmetric L-type attenuator.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11 (a) Differentiate symmetrical and asymmetrical networks and explain the propagation and impedance parameters.
(b) Find the open and short circuit impedance of a T network prove the product of Zoc and Zsc is equal to Zo^2.

12 (a) Design an m-derived T section low pass filter having cutoff frequency 100 HZ, design impedance 600 ohm and frequency of infinite attenuation of 1050 Hz.
(b) Design a low pass constant k type filter with fe = 10Khz and Rk = 600 ohms.

13 (a) Explain how an m-derived filters are obtained from constant k types filters. Explain for both low and high pass case and draw the clear circuits in each case.
(b) Differentiate between various methods of network synthesis.

14 Obtain step response of an RC & RL circuits.

15 (a) What is an attenuator? Derive the necessary equation for the design of a symmetrical Pi attenuator.
(b) Design a symmetrical T network attenuator with D=40 dB and Ro = 600 ohm.

16 Design an symmetrical T-attenuator having the attenuator of 19dB and image impedance of 260Ω at source ad 475Ω at load.

17 A transfer function is given by $Z(s) = (2s^2+12s+14)/ (s+2) (s+4) (s+6)$. Draw ROC and Pole zero plot too.

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Code No. D-3542/CBCS

FACULTY OF ENGINEERING

B.E. IV / IV III Semester (CBCS) (AE) Main Examination, March / April 2022

Subject: Fluid Mechanics and Machinery

Time: 3 hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions **(10 x 2 = 20 Marks)**

1 Explain the term Dynamic Viscosity and kinematic viscosity.
2 Differentiate between absolute pressure and Gauge pressure.
3 Distinguish between rotational flow and irrotational flow.
4 State Bernoulli's theorem.
5 What is Hagen Poiseuille's formula?
6 What is compound pipe?
7 Why it is that the speed of a reciprocating pump without air vessels is not high?
8 Define percentage slip?
9 Define unit Power and Unit Speed?
10 What are the Main parts of centrifugal pumps?

PART – B

Note: Answer any five questions **(5 x 10 = 50 Marks)**

11 a) Find the kinematic viscosity of an oil having density 981 kg/m^3 shear stress at a point in oil is 0.2452N/m^2 and velocity gradient at that point is 0.2 per sec.
b) Derive the expression for inverted U tube differential manometer containing a light liquid.

12 A pipe of dia 500mm carries water at a velocity of 28m/s. The pressure at the point A&B are given as 31.43/Ncm^2 and 34.564 N/cm^2 respectively, while the datum head at A&B are 30m and 32m. Find the Loss of head between A & B?

13 An oil of specific Gravity 0.8 and viscosity 0.09poise is flowing through a pipe of dia 300mm at the rate of 75 lit/sec. find i) Head loss due to friction ii) Power required to maintain the speed.

14 Determine the power given by the jet of water to runner of a Pelton wheel which is having tangential velocity as 20 m/s. The net head on the turbine is 50 m and discharge through the jet of water is 0.03 m^3/s. The side clearance angle is 15^0 and take Cv=0.975.

15 A centrifugal pump is running at 100 rpm. The outlet vane angle of the impeller is 45^0 and velocity of flow at outlet is 2.5m/s. the discharge through the pump is 200 lit/s when the pump is working against a total head of 20m. If the manometric efficiency of a the pump is 80%. Determine i) the Diameter of the impeller ii) The width of the impeller at outlet.

16 Define indicator diagram. How will you prove that the area of indicator diagram is proportional to the work done by the reciprocating pump?

17 a) What are the different methods of determining the coefficient of viscosity of a liquid? Describe any two methods in details.

b) What is cavitation? How do you avoid it in reaction turbine?

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Code No. D-3550/CBCS

FACULTY OF ENGINEERING

B.E. (IT) III - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Digital Electronic and Logic Design

Time: 3 Hours **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1 Realize basic gates using NAND only.
2 Demonstrate by means of truth table of identity x + yz = (x + y) (x+z).
3 Mention difference between PAL and PLA.
4 Define multiplexer and decoder.
5 Write the excitation table of JK flip flop.
6 Explain about Johnson counter.
7 What is the difference between a Moore and Mealy machines?
8 What are the elements of ASM chart?
9 Explain static hazards.
10 Define state diagram and stable table.

PART – B

Note: Answer any five questions. **(5x10 = 50 Marks)**

11 (a) Minimize the Boolen expression F=AB'C'+C+D+BD+A+C using K-map and implement the logic circuit using NAND gates only.
(b) State and explain De Morgan's theorem.

12 Prove the following equation using the Boolean algebraic theorems:
(a) A + A'B + AB+ = A+B
(b) A'BC + AB'C + ABC' + ABC = AB +BC+AC
(c) Write a VHDL code for implementing the above circuits by instantiating logic gates.

13 (a) Design a 3 bit asynchronous counter using JK flip flops.
(b) Write the VDHL code for D flip flop.

14 (a) Design an FSM circuit detecting the sequence '111'. It has one input and one output. The Output should become '1' whenever the above sequence is detected.
(b) Write the VHDL code to implement the above FSM circuit.

15 (a) Explain the operation of a basic SR latch and write its truth table.
(b) Design 4 bit shift register.

16 (a) Draw the internal architecture of FPGA and explain.
(b) Construct full adder circuit using Half adder and basic gates.

17 Write short notes on the following:
(a) Use of CAD tools in digital design.
(b) Differentiate flip flop, Truth table and excitation table.

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Code No.D-3010/NON-CBCS

FACULTY OF ENGINEERING

B.E. II / IV (Civil, EEE / EIE / MECH / PROD / AE / CSE) I - Semester (NON-CBCS)
(Backlog) Examination, March / April 2022
Subject: Mathematics - III

Time: 3 Hours **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions **(25 Marks)**

1. Eliminate the arbitrary function f to obtain a partial differential equation from $z - xy = f(x - y)$.
2. Solve $pq = 1$.
3. State Euler's formula for the function $f(x)$ defined in $(-c, c)$ in Fourier series.
4. Solve by the method of separation of variables $3u_x + 2u_y = 0, u(x, 0) = 4e^{-x}$.
5. Let X be a random variable with the following probability distribution.

X	0	1	2	3
$P(X)$	1/3	1/2	1/24	1/8

   Then find $E(X)$.
6. If the probability density function of a random variable is given by $f(x) = \begin{cases} k(1-x^2)\ for\ 0 < x < 1 \\ 0\ else\ where \end{cases}$ Then find k.
7. A Poisson variate satisfies $2P(X = 1) = P(X = 2)$. Then find $P(X = 4)$.
8. Write any two conditions of applicability of chi-square test.
9. Fit a straight line $y = a + bx$ for the following data:

x	0	1	2	3
y	1	2	2	3

10. Prove that correlation coefficient is the geometric mean between the regression coefficients.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Find complete integral of $(p^2 + q^2)y = qz$ by Charpit's method.

12. (a) Find half range cosine series for $f(x) = \pi - x$ in the interval $(0, \pi)$.
    (b) If a string of length l is initially at rest in equilibrium position and each of its points is given the velocity $V_0 sin^3\left(\frac{\pi x}{l}\right)$, find the displacement $y(x, t)$.

13. (a) If the first four moments of a distribution about a value 5 are equal to $-4, 22, -177$ and 560. Determine moments about mean.
    (b) In a bolt factory machines A, B, C manufacture 20%, 30%, 50% of the total of their output and 6%, 3% and 2% are defective. A bolt is drawn at random and found to be defective. What is the probability that it is manufactured by machine C.

14. (a) If X is a normal variate with mean 25 and standard deviation 5, find the probability that i) $15 \leq X \leq 30$ and ii) $|X - 30| \geq 10$.
    (b) A dice is thrown 102 times and the following distribution of faces is obtained.

X	1	2	3	4	5	6
f	15	25	16	20	12	14

    Can we conclude that all faces are equally likely to occur? Test at 5% level of significance. (Given $\chi_5^2(0.05) = 11.07$)

..2

15. (a) Find the curve of best fit of $y = ae^{bx}$ to the following data:

x	1	5	7	9	12
y	10	15	12	15	21

(b) The equations of two regression lines obtained in a correlation analysis are $3x + 12y = 19$ and $3y + 9x = 46$. Find i) Coefficient of correlation and ii) Mean values of x and y.

16. (a) Solve $(z - y)p + (x - z)q = (y - x)$

(b) Develop $f(x)$ in a Fourier series in the interval $(0, 2)$ if $f(x) = \begin{cases} x, 0 < x < 1 \\ 0, 1 < x < 2 \end{cases}$

17. (a) Fit a Poisson distribution to the following data:

x	0	1	2	3	4	5
y	110	170	130	60	23	7

(b) Calculate the coefficient of correlation from the following data:

x	1	2	3	4	5	6	7	8	9
y	9	8	10	12	11	13	14	16	15

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Code No. D-3039/NON-CBCS

FACULTY OF ENGINEERING

B.E. II / IV (I.T.) I Semester (NON-CBCS) (Backlog) Examination, March / April 2022

Subject: Discrete Mathematics

Time: 3 hours **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions **(25 Marks)**

1 Define counter example and give an example.
2 Show that the premises "everyone in this class has taken course in Computer Science" and "Kohli is student in this class" imply the conclusion "Kohli has taken course in Computer Science".
3 Describe time complexity of linear search algorithm.
4 What is GCD of 120,500?
5 Define Bernoulli's trial.
6 What is random variable?
7 Define planar graph.
8 What is chromatic number?
9 Define Full binary tree.
10 What is minimum spanning tree?

PART – B

Note: Answer any five questions **(5 x 10 = 50 Marks)**

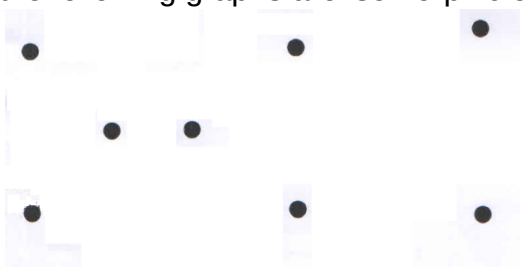
11 (a) Construct truth table for $(p \leftrightarrow q) \leftrightarrow (r \leftrightarrow s)$.
(b) Using Caesar' Cipher encrypt the following text "MEET YOU IN THE PARK".

12 (a) How many bit strings of length 8 either start with a 1 bit or end with 2 bit 00?
(b) Define generalized pigeon-hole principle and show that in a group of 30 people we can select five people who have been born on same day of the week.

13 Define minimum spanning tree and explain Prim's algorithm with an example.

14 What is the solution for the following recurrence relation
$a_n = 5a_{n-1} – 6a_{n-2}$ with $a_0 = 1$ and $a_1 = 1$?

15 (a) Explain about divide and conquer algorithms.
(b) Find whether the following graphs are isomorphic or not.



16 Explain about:
(a) Hamilton path and Hamilton circuit with examples.
(b) Prefix code with example.

17 Write short notes on:
(a) Methods of proof
(b) Properties of relation
(c) Addition theorem of probability

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Code No.3023/NON-CBCS

FACULTY OF ENGINEERING

B.E. II / IV (ECE) I - Semester (NON-CBCS) (Backlog) Examination, March / April 2022

Subject: Applied Mathematics

Time: 3 Hours **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(25 Marks)**

1. Form a Partial differential equation by eliminating the arbitrary function f from $z = f(x^3 + y^3)$.
2. Solve $p^2q^2(px + qy - z) = 2$.
3. Prove that $u = x^2 - y^2 - 2xy - 2x + 3y$ is harmonic.
4. Evaluate $\int_0^{1+i}(x^2 - iy)dz$ along the path $y = x$.
5. Determine the singular points of the function $f(z) = \frac{z}{z^2-1}$.
6. Define Conformal mapping.
7. Define interpolation.
8. Write Newton's divided difference interpolation formula.
9. Write normal equations to fit a straight line.
10. Prove that the correlation coefficient is the geometric mean between the regression coefficients.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Solve $z = p^2x + q^2y$ by Charpit's method.

12. (a) Determine the analytic function whose real part is $e^{2x}(xcos2y - ysin2y)$.
    (b) Use Cauchy's integral formula to evaluate $\oint_C \frac{e^{2z}}{(z+1)^4}dz$, where C is the circle $|z| = 2$.

13. (a) Expand $f(z) = \frac{z}{(z+1)(z+2)}$ about $z = -2$.
    (b) Using Residue theorem, evaluate $\oint_C \frac{2z-1}{z(z+1)(z-3)}dz$, where C is the circle $|z| = 2$.

14. (a) Find a real root of $x^5 - 5x^2 + 3$=0 by Newton-Raphson's method.
    (b) Compute $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at $x = 1.5$ for the following data:

x	0	1	2	3	4	5
y	1	2	5	7	14	26

15. (a) If θ is the acute angle between the two regression lines in the case of two variables x and y, show that $tan\theta = \frac{1-r^2}{r} . \frac{\sigma_x \sigma_y}{\sigma_x^2+\sigma_y^2}$.

(b) Obtain a relation of the form $y = ab^x$ for the following data by the method of least squares.

x	2	3	4	5	6
y	8.3	15.4	33.1	65.2	127.4

16. (a) Solve $(mz - ny)p + (nx - lz)q = ly - mx$.

(b) Evaluate $\oint_C \frac{e^z}{(z+3)(z+2)} dz$, where C is the circle $|z - 1| = \frac{1}{2}$.

17. (a) Find the bilinear transformation which maps the points $z = 1, i, -1$ into the points $w = 0, 1, \infty$.

(b) The equations of two regression lines obtained in a correlation analysis are $3x + 12y = 19, 3y + 9x = 46$. Find Mean values of x and y.

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Code No. D-2345/N/AICTE

FACULTY OF ENGINEERING

B.E. (CIVIL) III - Semester (AICTE) (MAIN) (New) Examination,
March / April 2022

Subject: Solid Mechanics

Time: 3 Hours **Max. Marks: 70**

Note: **(i) First Question is compulsory and answer any four questions from the remaining six questions. Each question carries 14 marks.**
(ii) Answers to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may suitably be assumed.

1 (a) Differentiate tensile, compressive and shear stresses with the help of neat sketches.
(b) A hollow steel column has an external diameter of 250 mm and an internal diameter of 200 mm. Find the safe axial compressive load for the column if the safe compressive stress is 120 N/mm^2.
(c) Define a beam and classify different types of beams based on the support conditions.

(d) Write the bending equation for pure bending and explain the terms involved.
(e) Sketch the variation of shear stress for beam sections of shape
(i) hollow square (ii) "T" (iii) Triangle (iv) Circle.
(f) Find the minimum length of a high strength steel rod of 12.5 mm diameter so that one end can be twisted by 30^o with respect to the other end, without exceeding a shear stress of 270 N/mm^2. Modulus of rigidity C = 8 X 10^4 N/mm^2.
(g) Sketch the failure of a thin cylinder due to internal pressure.

2 (a) Draw the stress strain curve for a mild steel and discuss briefly about the salient points.
(b) Two steel rods one of 80 mm diameter and the other of 60 mm diameter were joined end to end by means of a turnbuckle. The other end of each rod is rigidly fixed and there is initially a small tension in the rods. If the effective length of each rod is 4 m, find the increase in this tension when the turnbuckle is turned by one-quarter of a turn. On the rod of bigger diameter there are 3 threads per 20 mm while there are 4 threads per 20 mm on the other rod. Neglect the extension of the turn buckle. Find also what rise in temperature would nullify the increase in tension. Take E = 2 X 10^5 N/mm^2 and α = 1.2 X 10^{-5} /^{o}C. CO-1 BL-3

3 Draw shear force and bending moment diagrams for the beam shown in Fig. 1 below.

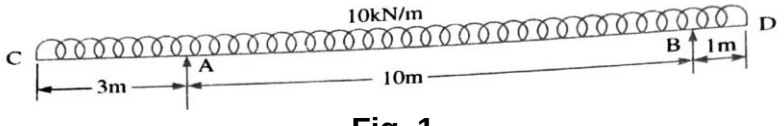

Fig. 1

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4 (a) Derive the bending equation for prismatic beams made of homogeneous and linearly elastic materials subjected to pure bending.
(b) Write assumptions in the theory of pure bending.

5 A beam of I-section 500 mm deep and 190 mm wide has flanges 25 mm thick and web 15 mm thick. It carries a shearing force of 400 kN at a section. Calculate the maximum intensity of shear stress in the section assuming the moment of inertia to be 6.45 X 10^8 mm^4. Also, calculate the total shear force carried by the web and sketch the shear stress distribution across the section.

6 (a) The principal stress at a point in a bar are 200 N/mm^2 (tensile) and 100 N/mm^2 (compressive). Determine the resultant stress in magnitude and direction on a plane inclined at 60^o to the axis of the major principal stress. Also, determine the maximum intensity of shear stress in the material at the point.
(b) A steel band is 50 mm wide and is secured around a smooth rigid cylinder of radius 200 mm (Fig. 2). If the bolts are tightened so that the tension in them is 1800 N. Determine the tensile stress in the steel band, the pressure exerted on the cylinder and the amount by which half the band stretches. Take E = 2 X 10^5 N/mm^2.

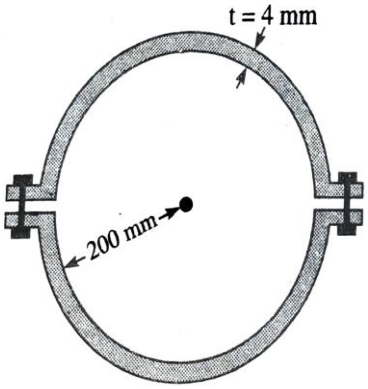

Fig. 2

7 (a) A metal bar of 10 mm diameter when subjected to a pull of 23.55 kN gave an elongation of 0.30 mm on a gauge length of 200 mm. In a torsion test on the same material, a maximum shear stress of 40.71 N/mm^2 was measured on a bar of 50 mm diameter, the angle of twist measured over a length of 300 mm being 0^o 21'. Determine the poisson's ratio of the material.
(b) A close coiled helical spring is to have a stiffness of 1 N/mm of compression under a maximum load of 45 N and a maximum shearing stress of 126 N/mm^2. The solid length of the spring (when the coils are touching) is to be 45 mm. Find the diameter of the wire, the mean diameter of the coils and the number of coils required. Modulus of rigidity
C = 4.2 X 10^4 N/mm^2.

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Code No. D-2348/N/AICTE

FACULTY OF ENGINEEERING

B.E. (EEE/EIE) III - Semester (AICTE) (Main) (New) Examination, March / April 2022

Subject: Engineering Mechanics

Time: 3 Hours **Max. Marks: 70**

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each Questions carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed

1 a) Define Coplanar force system and Non-coplanar force system.

b) What is coefficient of restitution

c) State and prove parallel axis theorem.

d) Differentiate between centroid and center of gravity.

e) Define polar moment of inertia.

f) What are the Zero force members in a truss.

g) State D 'Alembert' s principle.

2 a) A solid cylinder 30mm diameter and weighing 30N is placed in a triangular channel, as shown in fig.2.1 Neglecting friction between the contact surfaces, calculate the normal reactions on the sides of the channel

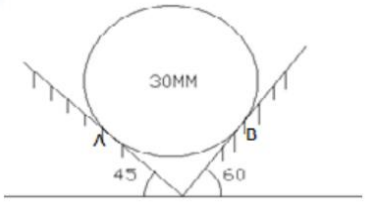

Fig.2.1

b) A system of three forces acting on a body is shown in fig.2.2 Determine the magnitude, direction and position of the resultant force with respect to A.

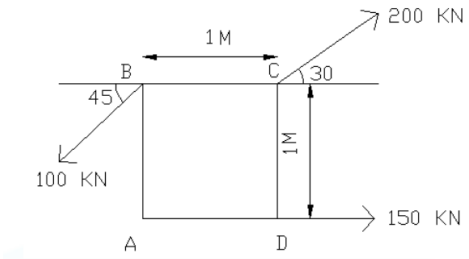

Fig.2.2

3 a) Define principal axes and principal moment of inertia

b) Determine the centroid of the shaded area shown in Figure 3.1

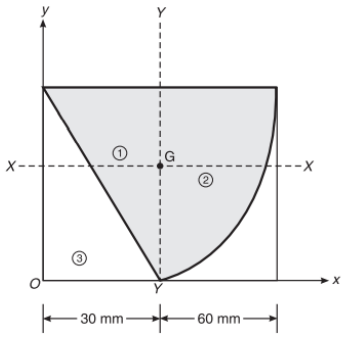

Fig.3.1

4 a) Find the reaction at D for the beam shown in figure 4.1 using principle of virtual work.

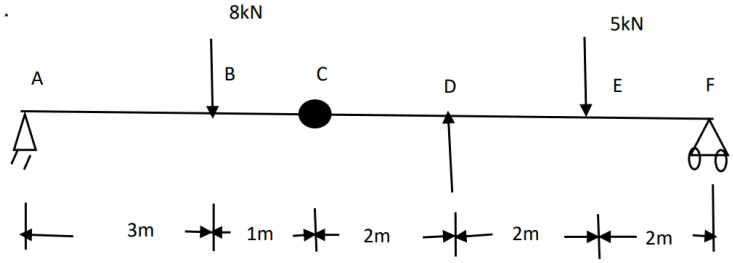

Fig.4.1

b) A ladder 5 m long rests on a horizontal ground and leans against a smooth wall at an angle of 70° with the horizontal as shown in Figure 4.2. The weight of the ladder is 900 N and a man weighing 750 N stands on the ladder 1.5 m from the bottom of the ladder. Calculate the coefficient of friction between the ladder and the ground.

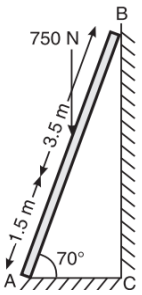

Fig.4.2

5 a) With neat sketches differentiate between motion of translation and motion of rotation.

b) The acceleration of a particle is defined by the relation $a = (32 – 6t^2)$. The particle starts at t = 0 with v = 0 and x = 50 m. Determine (a) Time when the velocity is again zero (b) Position and velocity when t = 6 s (c) The total distance travelled by the particle from t = 0 s to t = 6 s.

6 a) Explain method of joint and method of sections used in analysis of simple Trusses.

b) Analyze the truss shown in Figure 6.1 by the method of joints. Tabulate the result and indicate the nature of force in the truss.

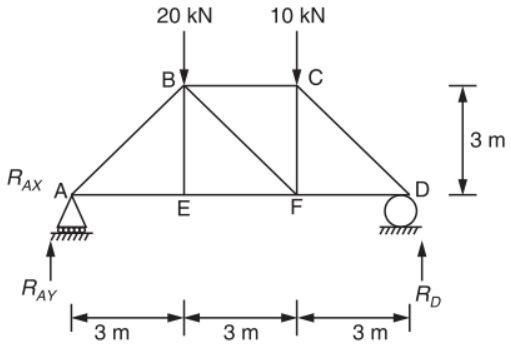

Fig. 6.1

7 a) The bob of mass 1 kg of a simple pendulum of length 'L' meters rotates in a horizontal circular path of radius 0.25 m with uniform speed. Find the time for one complete rotation.

b) Determine the moment of inertia about the horizontal axis of the plane lamina. Also find k about the horizontal axis.

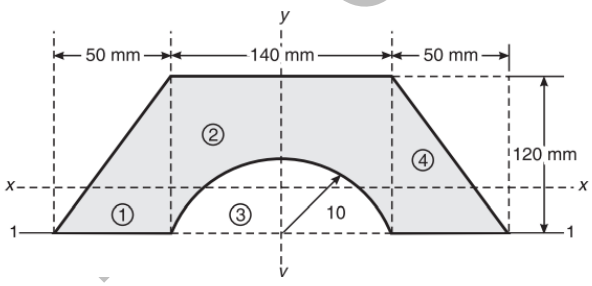

Fig.7.1

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