



## UNIT-I

Q.No.	Description
1	<p>What are various properties of Cement? Explain in with salient points.</p> <p style="text-align: center;">OR</p> <p>What is composition of cement Explain in detail?</p> <p style="text-align: center;">OR</p> <p>Discuss the consistency, initial setting tie and final setting time test of cement.</p> <p style="text-align: center;">OR</p> <p>Explain any two test conducted on cement.</p>
2	<p>Write short notes on the following</p> <ul style="list-style-type: none"> <li>a) Raft or mat foundation</li> <li>b) Marble flooring</li> <li>c) Purpose of dams</li> </ul>
3	<p>What is workability of concrete? Explain factor effecting workability.</p> <p style="text-align: center;">OR</p> <p>Explain slump cone test with diagram.</p> <p style="text-align: center;">OR</p> <p>Discuss the design mix of concrete. Also explain curing and its methods.</p> <p style="text-align: center;">OR</p> <p>Explain any two test conducted on concrete.</p>

	<p>OR</p> <p>Write about physical and Chemical characteristics of concrete.</p> <p>OR</p> <p>Discuss different ingredients of concrete. Also differentiate between mortar and concrete.</p>
4	<p>Explain Manufacturing and classification of Bricks.</p> <p>OR</p> <p>Discuss field and lab tests performed on Bricks.</p> <p>OR</p> <p>Explain the properties of good Bricks.</p> <p>OR</p> <p>Write short note on</p> <ul style="list-style-type: none"> <li>a) Compressive strength of brick</li> <li>b) Effelorensence test</li> <li>c) Water absorption test</li> </ul>
5	<p>Explain classification of Stones.</p> <p>OR</p> <p>Discuss test performed on building stones.</p> <p>OR</p> <p>Explain the properties of good building stones.</p>
6	<p>Explain different types of staircase with diagrams.</p>



7	What is seasoning of timber? Explain its various methods.
8	What are various types of doors and windows draw their diagrams.
9	Define <ul style="list-style-type: none"><li>a) Plastering and Pointing</li><li>b) Elements of building Construction (OR Discuss different building elements and materials.)</li><li>c) Shallow and Deep Foundation (OR explain different types of footing)</li></ul>



## UNIT-II

Q.No.	Description
1	<p>List out various instruments used in surveying. Also draw their diagram.</p> <p style="text-align: center;">OR</p> <p>What do you understand by surveying? Enlist different instruments used in surveying.</p>
2	<p>The following readings were taken by a 4m staff: 0.875, 1.225, 1.285, 1.425, 1.165, 0.785, 0.925, 1.225, 2.825, 0.895, 1.255, 1.685 and 0.915 The instrument was shifted after 5th and 9th reading. Enter the data in level book and calculate R.L. of all the points if first reading was taken on B.M. 100.00 apply check.</p>
3	<p>What is EDM? Explain its concept.</p>
4	<p>Write short note on</p> <ol style="list-style-type: none"> <li>1) Plane table survey</li> <li>2) Fore Bearing and back Bearing</li> <li>3) Survey Station and Fore sight Back sight.</li> </ol>
5	<p>Explain error in chain survey.</p> <p style="text-align: center;">OR</p> <p>Discuss chain survey in detail.</p> <p style="text-align: center;">OR</p> <p>Explain the methods of ranging.</p>
6	<p>What do you mean by term leveling? Explain Different types of leveling in detail.</p>
7	<p>What is local attraction? How it is eliminated.</p>



8	Discuss different parts of theodolite with diagram.
9	<p>The following are the consecutive reading were taken with a levelling instrument at intervals of 20 m. 7</p> <p>2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630 m. The instrument was shifted after the fourth and eight reading. The last reading was taken on a BM of RL 110.200 m. Find the RLs of all the point using Rise and Fall method and satisfy the answer with arithmetic Check.</p>
10	<p>The following are the consecutive reading were taken with a level and a 4-meter levelling staff on a continuously sloping ground at a common interval of 30 m. 8</p> <p>0.855(A), 1.545, 2.335, 3.115, 3.825, 0.455, 1.380, 2.055, 2.855, 3.455, 0.585, 1.015, 1.850, 2.755, and 3.845(B). The R.L. of the first reading at A was 380.500. Make entries in level book and apply the usual check. Determine the gradient of AB. The instrument is shifted after 5<sup>th</sup> and 10<sup>th</sup> reading.</p>



**UNIT-III**

Q.No.	Description
1	<p>What are contour line? Explain their properties (characteristics).</p> <p>OR</p> <p>Discuss about Contour line, Contour interval, horizontal interval and contour map.</p>
2	<p>What are principles and applications of remote sensing in civil Engineering?</p> <p>OR</p> <p>Write short note on following</p> <ul style="list-style-type: none"><li>• GIS</li><li>• Indian Remote Sensing Satellite.</li></ul>
3	<p>The following offset were taken from a line to an irregular boundary line at an interval of 10 m 0, 2.50, 3.50, 5.00, 4.60, 3.20, 0 m Compute the area between the chain line, the irregular boundary line and the end offsets by</p> <ol style="list-style-type: none"><li>Mid-Ordinate Rule</li><li>Average-Ordinate Rule</li><li>The Trapezoidal Rule</li><li>Simpson's Rule</li></ol>



4	<p>An embankment of a width 10m and side slope of 1.5:1 is required to be made on a ground which is level in a direction transverse to the centreline. The centre line heights at 40 m intervals are as follows: 0.90, 1.25, 2.15, 2.50, 1.85, 1.35 and 0.85 Calculate the volume of earth work according to trapezoidal and prismoidal method.</p>
5	<p>Write short note on following</p> <ul style="list-style-type: none"><li>• Mid Ordinate Rule</li><li>• Trapezoidal Rule</li><li>• Simpson Rule</li></ul>



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**UNIT-IV**

Q.No.	Description
1	Define coplanar and concurrent forces. Also define free body diagram.  OR  Write short notes on the following  a) free body diagram b) conditions of equilibrium c) Bow Notation d) System of force
2	What do you understand by support reaction? Explain the method for finding support reactions.
3	State and prove Lami's theorem.
4	State and prove law of parallelogram.
5	Explain the difference between method of joints and method of section.  OR  Discuss the different methods of analysis of truss.  OR  What do you understand by truss? Explain any method of analysis of plane truss.



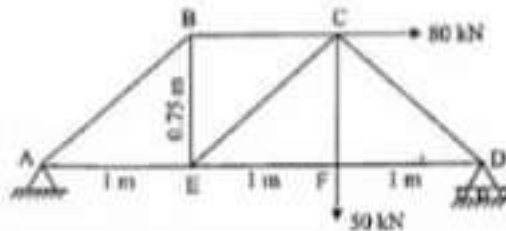


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6

Determine the force in members BC, CE, and EF shown in fig. using the method of joints.

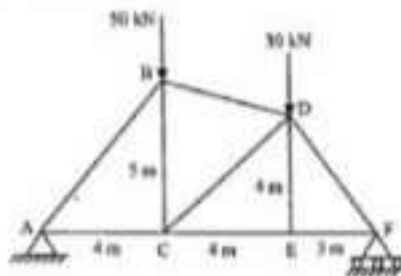
जोड़ों की विधि का उपयोग करते हुए आकृति में दिखाए गए सदस्यों BC, CE और EF में बल का निर्धारण करें।



7

Calculate the force in the member shown in fig. using the method of joints.

जोड़ों की विधि का प्रयोग करते हुए चित्र में दर्शाए गए सदस्य में बल की गणना कीजिए।

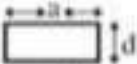
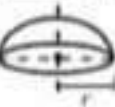
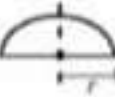

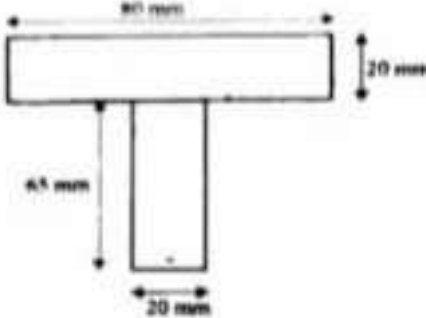




8	<p>Analyse unknown forces in a plane truss are as follows. निम्नलिखित "Plane Truss" में unknown forces को निकालिये।</p>
9	<p>State and derive the Lami's theorem and solve the problem given below using the theorem लामी के प्रमेय को लिखिए और व्युत्पन्न कीजिए और प्रमेय का उपयोग करके नीचे दी गई समस्या को हल कीजिए।</p>
10	<p>Write short notes on the following</p> <ol style="list-style-type: none"> <li>Types of Support</li> <li>Moment and Couple</li> </ol>



**UNIT-V**

Q.No.	Description
1	<p>Locate the centroid of following plane Laminas: निम्नांकित प्लेन लेमिना की centroid को दर्शाइये।</p> <p>a) Rectangular plane lamina आयताकार प्लेन लेमिना </p> <p>b) Hemisphere plane lamina हेमीस्फेयर प्लेन लेमिना </p> <p>c) Semicircular plane lamina अर्द्धवृत्तीय प्लेन लेमिना </p> <p>d) Cylindrical plane lamina - सिलिंड्रिकल प्लेन लेमिना </p>
2	Enumerate the expression for a moment of Inertia of rectangular lamina about its base.
3	<p>Determine the center of gravity of following.</p> 
4	Write short notes on the following



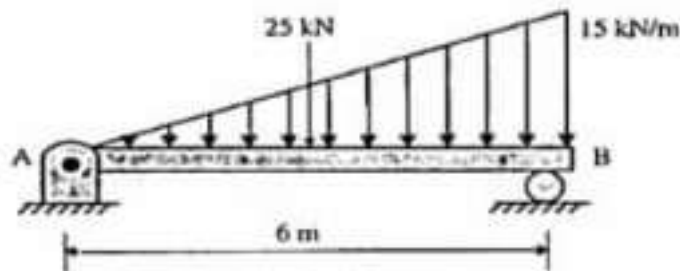
	<ul style="list-style-type: none"> <li>a) Centroid and Center of gravity</li> <li>b) Moment of inertia</li> <li>c) Radius of Gyration</li> <li>d) Shear Force and Bending Moment</li> </ul>
5.	<p>Draw the Shear force and Bending moment diagram for the simply supported beam carries a Point load of intensity “W” kN at a distance of “a” from the left supports and at a distance of “b” from the right supports. The total span of length “L” m.</p>
6	<p>Draw SFD and BMD for a simply supported beam of span 6m, subjected to a UDL of 5kN/m over its entire length.</p>
7	<p>Draw Shear force and bending moment diagram for a cantilever beam loaded as shown in figure 1.0 below</p> <p>The diagram shows a cantilever beam AC. At the fixed support A, there is a triangular load increasing from 0 to 10 kN/m over a length of 3m to point B. From point B to the free end C, there is a rectangular load of 5 kN/m over a length of 4m.</p>
8	<p>Enumerate the expression for a moment of Inertia of Triangular lamina about its base.</p>
9	<p>Define and Derive Parallel axis Theorem.</p>



10

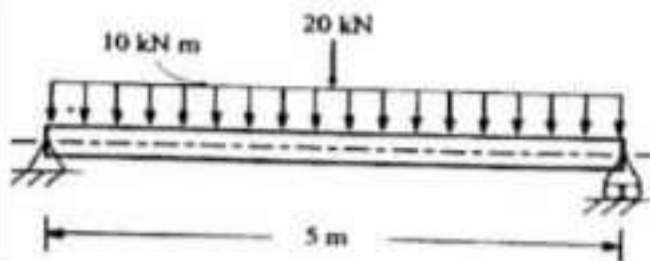
Draw the shear force and bending moment diagram for simply supported beam, which carries a uniformly varying load of  $15 \text{ kN/m}$  and a point load of  $25 \text{ kN}$  on its center having span of  $6 \text{ m}$ .

Simply supported beam के लिए shear force और bending moment अरेख को बनाएं, जो  $15 \text{ kN/m}$  का uniformly varying load और  $6 \text{ मीटर}$  के विस्तार वाले इसके केंद्र पर  $25 \text{ kN}$  का बिन्दु पर बहन करता है।



11

Draw the shear force and bending moment diagram for simply supported beam, which carries a uniformly distributed load of  $10 \text{ kN/m}$  and a point load of  $20 \text{ kN}$  on its center having span of  $5 \text{ m}$ .





12

Draw the Shear force and Bending moment diagram for the simple supported beam carries a Uniform distributed load of intensity " $W$ " kN/m throughout a span of length " $L$ " m.