CBSE Question Paper - 2010

ENGINEERING SCIENCE

(Common for Automobile Tech., Structure & Fabrication and Air

Conditioning & Refrigeration)

(Theory) Paper I

Class – XII

Time allowed: 3 hours

Maximum Marks: 70

PART I
ENGINEERING DRAWING

Note: Attempt all question.

40

1. A regular pentagonal pyramid, base side 30 mm, axis 80 mm long, is resting on its base on H.P., having a side of the base parallel to V.P. and nearer the observer. It is cut by a section plane, parallel to H.P. an passing through the midpoint of the axis . Draw its sectional top view and front view.

15

2. A cube of 40 mm side is resting on one of its square faces on H.P., having a side of side of that face parallel to V.P. It is cut by a section plane perpendicular to V.P., inclined at 45° to H.P. and passing through a point on the left vertical edge, 20mm above H.P Draw the development of lateral surfaces of the truncated cube.

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3. Sketch free hand top view and sectional front view of a single riveted double cover butt joint with a diameter of rivet as 16 mm. give other dimensions also.

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OR

Sketch free hand front view, upper half in section, of a flanged coupling, having a shaft diameter of 35mm. Give all other dimensions.

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PART II
WORKSHOP TECHNOLOGY

30

Note: Attempt any three questions.

4. Explain the process of gas welding. Give the equipment, used in this type of welding.

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5. Explain resistance welding. For what type of work, do we use seam welding? Explain by examples.

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6. What is the function of coatings on materials? Give examples of metallic and non – metallic coatings along with their applications.

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7. Compare the properties of thermoplastics and thermosetting plastics. Give applications of each.

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8. Write short notes on any two of the following :

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(i)   Anodizing
(ii)   Defects in welding
(iii)   Gas welding techniques
(iv)   Soldering