

17623

15162

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Use of Non-programmable Electronic Pocket Calculator is permissible.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any THREE of the following: 12
- (i) What are the characteristics and features of natural fibre rope?
 - (ii) Enlist various hoisting tools and equipments. State the uses of drift pin.
 - (iii) Explain the use of spreader bar.
 - (iv) Draw a labelled sketch of differential hoist and state its use.
- b) Attempt any ONE of the following: 6
- (i) Define accident prevention. What are the causes of accidents? What type of care is to be taken while handling loading by lifting machines?
 - (ii) State the need of erection costing. Write the steps involved in erection costing.

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- 2. Attempt any TWO of the following: 16**
- a) What precautions are to be considered in handling and storing synthetic fibre ropes? How does synthetic fibre ropes inspected?
 - b) What are the objectives for devising hoist signals? Compare boom up and boom down operation.
 - c) Write the procedure of performing various tests before and during installation like leak test.
- 3. Attempt any TWO of the following: 16**
- a) Write the construction and application of steel wire ropes. Also write specifications of SWR.
 - b) What are the various types of slings? Explain construction of double basket sling. Also state merits and demerits of slings.
 - c) What are the factors to be considered for correct handling of loads on slings? Write the steps for estimation of centre of gravity.
- 4. a) Attempt any THREE of the following: 12**
- (i) Compare plain lay rope and shroud lay rope (any four points).
 - (ii) Explain the operation of spur geared hoist.
 - (iii) What are the steps involved during:
 - 1) personal injury accidents
 - 2) property damage accidents
 - (iv) Suggest a suitable method for material handling by lifting devices. Explain in brief.
- b) Attempt any ONE of the following: 6**
- (i) What is meant by hitches and splices? How does hoisting chain inspected?
 - (ii) Explain the use of pads at sharp edges while placing slings. How we can adjust sling lengths between hook and lifting lugs?

5. Attempt any TWO of the following: 16

- a) State the requirements of selection of SWR. How wire ropes are lubricated? Explain inspection procedure of steel wire ropes.
- b) What are the various reasons of failure of machinery and equipments? Also state benefits of accident prevention.
- c) (i) Write the importance of erection of pressure vessels. How does heat exchanger mounted?
(ii) Differentiate between installation of boiler mountings and accessories.

6. Attempt any FOUR of the following: 16

- a) Compare synthetic fibre ropes and steel wire ropes (any four points).
 - b) Explain the operation and use of pull lift hoist.
 - c) What are the objectives of good house keeping? Explain use of prospective equipments.
 - d) How is aligning and leveling the pressure vessel takes plane?
 - e) What are the safety instructions to be considered while erecting boilers?
 - f) Explain physical checking of the dimensions of the foundation.
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