

(ENGLISH)

[TIME ALLOWED—3 HOURS]

(MARKS—100)

**LIFT AND ESCALATOR OPERATION, INSTALLATION AND
MAINTENANCE (THEORY-II)****Marks**1. (a) Fill in the blanks (any *five*) :—

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- (i) In a geared machine unit, change in speed and torque depends on
- (ii) In escalator vertical distance between bottom and top landing is called
- (iii) When final limit switch is operated, lift cannot work in direction.
- (iv) In a lift, counterweight is used to provide
- (v) Side of an escalator extending above deck up to handrail is called
- (vi) As per standards, diameter of traction sheave should not be less than diameter of suspension rope used.

(b) Match the pairs :—

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' A ' Group**' B ' Group**

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|---------------------|---------------------|
| (i) Escalator | (a) Traction |
| (ii) Hydraulic lift | (b) Tread |
| (iii) Geared lift | (c) Piston |
| (iv) Moving walk | (d) Inclination 30° |
| (v) Step | (e) Pallets. |

(c) Write in short :—

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| (i) LOTO | (ii) FFL | (iii) DBG |
| (iv) OHRH | (v) OSG | (vi) GAD. |

(d) *true or false* (any *five*) :—

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- (i) When an empty car moves in up direction, regeneration takes place.
- (ii) In lift, counterweight overbalance is 100%.
- (iii) Over speed governor operates when lift over speeds in up direction.
- (iv) In gearless lift 3-phase induction motor is used.
- (v) Final limit switch is operated in down direction, before car is buffered.
- (vi) In lift Electromagnetic brake is applied by giving supply to its coil.

[*turn over*]

2. Attempt any *two* of the following :— 16
- (a) Describe different types of drive systems used in lift.
 - (b) Explain function of phase failure and reversal relay in lift.
 - (c) Describe different types of roping systems used in lift.
3. Attempt any *two* of the following :— 16
- (a) Explain various electro-mechanical passenger safety devices provided in lift.
 - (b) Explain various passenger safety devices provided in escalator.
 - (c) Describe Fireman control logic operation.
4. Attempt any *two* of the following :— 16
- (a) Describe important requirements to be fulfilled by customer before erection work can be started.
 - (b) Explain how to get permission to install a lift and get license to operate it.
 - (c) Explain function of over speed governor and safety gear assembly.
5. Write short notes on (any *four*) :— 16
- (a) Traction machine unit
 - (b) Curtain of light used
 - (c) Terminal and final limit switch
 - (d) Main rope anchoring method
 - (e) Buffers.
6. Attempt any *two* of the following :— 16
- (a) Explain different logic functions achieved by using load sensing device.
 - (b) Draw functional block diagram of automatic rescue device and describe its functions.
 - (c) Explain how single speed lift moves in up/down direction by drawing its power circuit diagram.
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