

17558

11920

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

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| 1. (A) Attempt any THREE of the following : | 12 |
| (a) Write short note on chemical hazards. | |
| (b) Explain common sources and precaution of electrical hazards. | |
| (c) Explain air purifier type respiratory device. | |
| (d) Differentiate between air purifier type and supplied air type respiratory device. | |
| (B) Attempt any ONE of the following : | 6 |
| (a) Explain in detail about explosion hazard, classification of explosive and precaution while handling explosive chemicals. | |
| (b) Explain principle and working of foam type fire extinguisher. | |
| 2. Attempt any FOUR of the following : | 16 |
| (a) Describe in detail about health hazard effect of infrared radiation and X-rays. | |
| (b) Explain self contained breathing apparatus. | |
| (c) Describe in detail objectives of safety audit. | |
| (d) Explain principles of material handling. | |
| (e) Classify different type of fire with suitable fire extinguisher. | |
| 3. Attempt any FOUR of the following : | 16 |
| (a) Explain the effect of noise on human being. List their legislative measure. | |

- (b) Enlist safety precaution in transportation of flammable liquids.
 - (c) Explain in detail functions of plant maintenance department.
 - (d) Describe online maintenance of steam trap.
 - (e) What is objective of plant maintenance department ?
4. (A) Attempt any THREE of the following : 12
- (a) Explain in detail positive pneumatic conveyor.
 - (b) Enlist function of material handling department.
 - (c) Describe in detail about preventive maintenance.
 - (d) Explain principles, construction, working of soda acid type fire extinguisher.
- (B) Attempt any ONE of the following : 6
- (a) Explain the precaution to be taken during transportation of water reactance chemicals and toxic chemicals.
 - (b) Describe in detail procedure of safety auditing.
5. Attempt any TWO of the following : 16
- (a) Explain following with respect to extinguishers :
 - (i) Selection of proper extinguisher
 - (ii) Guidelines to use extinguisher
 - (iii) Condition in which avoid use of extinguisher
 - (b) Describe following with respect to maintenance :
 - (i) Purpose of maintenance
 - (ii) Effect of maintenance
 - (iii) Types of maintenance
 - (iv) Elements of effective maintenance management
 - (c) Describe procedure of start up and shutdown of plant with following points :
 - (i) System level activities
 - (ii) Equipment level activities
 - (iii) Start up logic
 - (iv) What should avoid
6. Attempt any TWO of the following : 16
- (a) Explain construction and working of belt conveyor with a neat labelled diagram.
 - (b) Describe in detail predictive maintenance and benefit of it.
 - (c) Explain PERT chart for shutdown maintenance with suitable example.
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