

17555

16172

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. Attempt any FIVE :

20

- (a) Compare line standard with end standard. (at least four points)
- (b) State requirements of good comparator.
- (c) What is selective assembly ? State its advantages.
- (d) Write factors affecting quality of a product.
- (e) What are the different duties of inspector ?
- (f) Write advantages & disadvantages of gamma ray radiography.
- (g) Explain leak detection by gas. State its applications.

- 2. Attempt any TWO :** **16**
- (a) Explain working principle of electronic comparator. State its advantages over mechanical comparator.
 - (b) Explain Taylor's principle of gauge design. How it is applied to design of plug and ring gauges ?
 - (c) Explain the role of technician in Q.C. How will you promote quality mindedness amongst workers & operators ?
- 3. Attempt any TWO :** **16**
- (a) State necessity of inspection planning. How it is performed ?
 - (b) How leaks are classified ? Explain the procedure of leakage testing under fluid pressure. State its importance.
 - (c) Explain following related to ultrasonic inspection :—
 - (i) Principles of operation.
 - (ii) Testing standard & procedure.
 - (iii) Advantages & limitations.
- 4. Attempt any TWO :** **16**
- (a) Explain various types of flaws detected by Eddy current testing. How 'magnetic' and 'non-magnetic' materials are tested ? State two applications of Eddy current testing.
 - (b) State purpose of bend test. Explain free bend test and guided bend test.
 - (c) Explain inspection procedure & stages for pressure vessels inspection. Write major provisions made in ASME codes for it.

5. Attempt any TWO :**16**

- (a) Write major provisions in DIN Standards & IBR code for pressure vessel inspection.
- (b) Explain the concept of Etch test. Compare macro-etch test with micro-etch test.
- (c) Explain the following regarding magnetic particle inspection.
 - (i) Basic principle
 - (ii) Flaws detected
 - (iii) Scope & limitations
 - (iv) Sensitivity

6. Attempt any TWO :**16**

- (a) Explain the following regarding X-ray radiography :
 - (i) Working principle
 - (ii) Safety precautions
 - (iii) Applications
 - (iv) Limitations
 - (b) How test specimen is prepared for Tensile testing ? Explain All weld metal test.
 - (c) Explain principle of impact testing & explain Izod test procedure & reporting of result.
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