

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3172015****Date:16-12-2023****Subject Name: Industrial Design and Applied Ergonomics****Time: 10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Q.1 | (a) What are the aspects of aesthetic design? | 03 |
| | (b) Define the terms: a) Industrial design b) Ergonomics | 04 |
| | (c) What is industrial design in engineering application in modern manufacturing systems? | 07 |
| Q.2 | (a) Advantages of ergonomic design. | 03 |
| | (b) State five areas (or branches) of ergonomics giving suitable example. | 04 |
| | (c) State Method of ergonomics control. | 07 |
| | OR | |
| | (c) What are the various design considerations for a product? Explain any three of them. | 07 |
| Q.3 | (a) Factors for selection of controlling devices | 03 |
| | (b) Briefly explain five forms of aesthetics giving suitable sketches and examples. | 04 |
| | (c) Write a report that explains to a design engineer why anthropometric data should be used in the design of human-machine systems. Give examples from everyday life to support your arguments. | 07 |
| | OR | |
| Q.3 | (a) State guidelines for Designing the Display Devices. | 03 |
| | (b) Which fields are mostly referred in ergonomics? | 04 |
| | (c) Explain the types of controls. Give sketches and examples. | 07 |
| Q.4 | (a) How do you explain concept of purpose style and environment? | 03 |
| | (b) Briefly discuss the visual effects of color on engineering products. | 04 |
| | (c) Explain in brief psychology of seeing general influences of line and form. | 07 |
| | OR | |
| Q.4 | (a) What is the role of ergonomics in engineering product design? | 03 |
| | (b) Briefly discuss the visual effects of line form on engineering products. | 04 |
| | (c) What are the design considerations for work station? Explain giving suitable sketch and example | 07 |
| Q.5 | (a) Explain concept of style giving examples. | 03 |
| | (b) What is Aesthetic Concepts of unity? | 04 |
| | (c) What are the seven key elements of unity? Discuss any three giving examples. | 07 |
| | OR | |
| Q.5 | (a) What is a concept of order with variety? Explain. | 03 |
| | (b) Explain color on engineering equipments. | 04 |
| | (c) Explain any case study from the Point of View of Aesthetics. | 07 |
