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Total No. of Printed Pages: 1

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B. Tech ME (Semester – 8th)
WORK STUDY AND ERGONOMICS
Subject Code: BMECD1824
Paper ID: 18112353

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. Define productivity and how it is measured.
- b. Explain objectives of work study.
- c. How the human capabilities can be assessed? Explain
- d. Define work measurement.
- e. What is performance rating?
- f. Define anthropometry.
- g. What is human machine system?
- h. What are stress and fatigue?
- i. What are the objectives and benefits of time study?
- j. What is mean by applied physiology in work place?

Section – B

(5 marks each)

Q2. How might an increase in productivity of a business affect

- (i) employees,
- (ii) stockholders, and
- (iii) consumers

Q3. (a) Construct a process chart and flow diagram for making coffee in an electric coffee maker'

(b) What are the limitations of time study?

Q4. What is work sampling? Explain the procedure of work sampling

Q5. Write notes on

- a) Influence of climate on human efficiency
- b) Influence of noise, vibration and light on human efficiency.

Q6. Explain with an example.

- i) Explain predetermined motion time systems.
- ii) Explain synthetic rating method.

Section – C

(10 marks each)

Q7. (a) What is Ergonomics? What is the scope of ergonomics?

(b) Explain: Travel Chart and Multiple activity chart.

Q8. i) Explain Gantt chart and SIMO chart briefly.

ii) Explain different methods of job evaluation on the basis of their merits and demerits.

Q9. Notes on the following.

- a) Fatigue allowance,
- b) Heat stress,
- c) Learning curves,
- d) Industrial noise

(2.5 each)