Roll No…….. **Total No. of Printed Pages: 1**

Total No. of Questions: [09]

B. Tech. (Mech. Engg.) (Semester –8th)
WORK STUDY & 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. What is the objective of a work study?
b. Mention one human factor involved in work study.
c. What is the function of a string diagram in method study?
d. What are SIMO charts used for in method study?
e. Define micro-motion study.
f. What is work sampling?
g. Name two factors that affect the rate of working in a time study.
h. What is the purpose of determining allowances in a time study?
i. What is the consequence of stress development in the human body during work?
j. What are the components of a man-machine system?

Section – B **(5 marks each)**

Q2. Define productivity and explain the key factors that affect productivity in an industrial environment.

Q3. What are the principles of motion economy? How are they applied in improving work design?

Q4. Describe the concept of work sampling and explain how sample size is determined.

Q5. Discuss the areas of study under ergonomics and how they contribute to improving workplace efficiency.

Q6. What is computer-based ergonomics? Discuss its role in improving human efficiency and reducing work-related injuries.

Section – C **(10 marks each)**

Q7. Explain the relationship between work study and management. How does work study benefit both supervisors and workers?

Q8. Describe various recording techniques such as outline process charts, flow process charts, and man-machine charts used in method study.

Q9. Define work measurement. What are the objectives and benefits of conducting work measurement in an organization?