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SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Engineering (Mech/Civil/Elect/BSE/QS)

First Year, First Semester Examination – 2017

ME1101- Workshop Engineering 1

Instructions for Candidates:

Answer any 4 questions

Each questions carries equal marks

No. of questions : 05

No. of pages : 02

Time : 2 hours

01.

- a) Explain the importance of Industrial safety. (05 marks)
- b) What are the objectives of industrial safety? (05 marks)
- c) Explain causes of accidents in workshops. (05 marks)
- d) Give five possible effects for the employee and employer after the accidents. (05 marks)
- e) Explain the fire triangle and types of fire extinguishers. (05 marks)

02.

- a) Explain the practical importance of knowing “properties of Materials. (05 marks)
- b) Write down different material properties with two example for each. (05 marks)
- c) What are the types of bonds in solids explain with necessary diagrams. (05 marks)
- d) Explain unit cell, space lattice, types of crystals in metallic elements (05marks)
- e) Briefly explain properties and applications of plastics, composites. (05 marks)

03.

- a) Explain the terms ‘least count’ and ‘zero errors for any measuring instrument? (05 marks)
- b) Explain the difference between direct measuring instrument and indirect measuring instrument with two examples. (05 marks)
- c) Give reasons for any inaccuracy possible in measuring instrument. (05 marks)
- d) What are the essential features desirable in a measuring instrument? (05 marks)
- e) Sketch and explain marking out tools use in workshops. (05 marks)

04.

A)

a) Briefly explain the common clamping devices use in workshop? (05 marks)

b) Sketch & name type of files and hammers use in engineering works.

(05 marks)

c) Explain three workshop operation and three workshop processes.

(05 marks)

B)

a) What is the nonferrous metals ? Write six nonferrous metals.

(05 marks)

b) Explain Properties and applications of ceramics.

(05 marks)

05. Write short description on any **five** topics from followings.

(Marks will be given for sketches, classifications, examples, and applications.)

1. Hammering
2. Riveting
3. Grinding
4. Drilling
5. Threads cutting
6. Soldering
7. Chiseling
8. Sawing

(05x05 =25 marks)