Total No. of printed pages = 4

FPT-402/S&MFM/4th Sem/2014/N

SERVICING AND MAINTENANCE OF FOOD MACHINERIES

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Fill up the blanks : 1×8=8

(i) ..... may be defined as the capacity to do work.

(ii) ..... is the ability of a material to resist deformation under stress.

(iii) ..... is the property of a material opposite to ductility.

(iv) Steel containing upto 0.15% carbon is known as ..... .

(v) The material commonly used for machine tool bodies is ..... .

[Turn over

(vi) The material commonly used for crane hooks is ..... .

(vii) A steel containing 0.8% carbon is known as ..... .

(viii) Sulphur makes the cast iron ..... and ..... .

(b) What are the factors considered for the selection of materials for engineering purposes ? 2

(c) Define the term 'elasticity' of the materials. Prove that steel is more elastic than rubber. 1+3=4

2. (a) Define the following mechanical properties of a material : 4

(i) Strength

(ii) Creep

(iii) Ductility.

(b) Distinguish clearly among cast iron, wrought iron and mild steel regarding their constituents and properties. 6

(c) What are the aims of heat treatment of steels ? 4

3. (a) Discuss the following types of heat treatment process : $3 \times 2 = 6$

(i) Normalising

(ii) Hardening

(iii) Annealing.

(b) Give the composition of Y-alloy and bronze. $2+2=4$

(c) Write some characteristics of aluminium. 4

4. (a) Mention some important properties of copper. 4

(b) Write about the composition and uses of any five types of brasses. 10

5. (a) What are the various applications of a gas compressor ? 8

(b) Define pump. Classify pump. How are pumps specified ? $2+2+2=6$

6. (a) Define packaging. What are the purposes of packaging ? $2+6=8$

(b) What is the difference between 3+3=6

(i) brittleness and hardness

(ii) stiffness and toughness ?

7. Write short notes on any *four* : 3.5×4=14

(a) Copper

(b) Fasteners

(c) Lubricants

(d) Duralumin

(e) Elements of rotary motion drive.