Total No. of printed pages = 3

END SEMESTER EXAMINATION – 2020

Subject Code : FPT - 402

SERVICING AND MAINTENANCE OF FOOD MACHINERIES

Full Marks : 70

Time : Three hours

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

PART–A

Marks – 25

1. Answer the following questions : 2×5=10

   (a) Write Hooke's law.

   (b) What is a centrifugal pump ?

   (c) What is hydraulic pipe joint ?

   (d) Draw fracture of brittle, moderately ductile and very ductile material.

   (e) What is cast iron ?

[Turn over

2. Fill in the blanks : 2×5=10

(a) Mechanical properties of metal are _____.

(b) Galvanic corrosion is _____.

(c) Design stress is _____.

(d) Process hazards are _____.

(e) Safety measures are _____.

3. Match Column – A with Column – B : 1×5=5

Column – A	Column – B
(a) Pasteurization of milk	(i) Pressure relief
(b) Passivation of stainless steel surface	(ii) Heat exchanger
(c) Safety valve	(iii) Enhancing Cr content to reduce corrosion
(d) Lubrication	(iv) Pipe fitting
(e) Union joint	(v) Reduce frictional heat generation

PART – B

Marks – 45

Answer any *three* questions : 15×3=45

4. How in pasteurization and homogenization of milk processing, different devices like heat exchanger, homogenization valve etc. play significant role ?

5. Write basic steps of food machinery design.

6. Why stainless steel is advantageous for food machineries ? Discuss briefly about high alloy steel mentioning their specific application.

7. Briefly discuss about mechanical properties of materials of construction for food machineries.

8. (a) What is "necking" ?

   (b) Discuss welded joint efficiency.

   (c) A high pressure vessel been covered with seamless elliptical dished head has an inside diameter of 40 inch, which is to be operated at an internal pressure of 200 psi. The inside depth of the dish is to be 9 inch for the allowable stress 13750 psi. The welded joint efficiency is 1 for seamless head. Calculate the thickness of elliptical cover head.