Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14FP2032** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PROCESS ECONOMICS AND PLANT LAYOUT DESIGN** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Discuss on the different aspects of developing a feasibility study by preparing one for a company which wants to start a dairy industry. | CO1 | 20 |
| **(OR)** | | | | |
| 2. | a. | Draw and explain the process flow sheets, material balance equation and system approach of orange juice concentrate plant. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Discuss in detail on the general principle of Hygienic design of a Food Plant. | CO2 | 10 |
| b. | Write down the factors to be considered for the site location of a fruit beverage. | CO3 | 10 |
| **(OR)** | | | | |
| 4. | a. | Outline the FSMS plan for a company manufacturing frozen meat products. | CO2 | 10 |
| b. | List out the principles of sanitary design and explain any 10 of them. | CO3 | 10 |
|  |  |  |  |  |
| 5. | a. | Develop a layout for a plant manufacturing 1000 kg / day of paneer, based on the principles of Richard Muther. | CO3 | 10 |
| b. | Write down the causes of accident taking place in food industry. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Discuss the work place safety of a dairy industry. | CO3 | 10 |
| b. | Discuss the priciples of HACCP. | CO3 | 10 |
|  |  |  |  |  |
| 7. |  | Discuss about the fixed capital investment for a food processing industry. | CO3 | 20 |
| **(OR)** | | | | |
| 8. |  | Mr X plans to set up a plant manufacturing condensed milk. The cost of the evaporator (10 kg/h) his friend bought for his concern was Rs. 8 Lakhs in 1996. The cost of steam boiler was Rs. 1 Lakh then for an appropriate capacity. Calculate the cost of setting up a plant now for a plant manufacturing 25kg/h, by the method of Miller. CEPC index for 1996 = 381.7 and for 2018= 617.8. | CO3 | 20 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Define depreciation and discuss briefly on the straight line method of depreciation. | CO2 | 8 |
| b. | Emphasize the cash flow diagram. With the help of a neat diagram, explain the various aspects of the cash flow diagram. | CO3 | 12 |