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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2017**

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Enlist the salient features of Organisational feasibility. | CO1,CO3 | 4 |
| b. | A consultancy firm wants to study the Technical feasibility for setting up a dietetic carbonated beverage manufacturing unit. Can you help them in the same? | CO1,CO3 | 16 |
| (OR) | | | | |
| 2. | a. | What is a process block diagram? A consultant wants to set up a 500 kg/hr *Kalakhand* unit. Can you design a process flow, managing the mass and material balance for the same? | CO1,CO3 | 15 |
| b. | What is the amount of fruits required for manufacturing 100 kg of Orange squash? Justify your answer based on the FSSAI standards? | CO1,CO3 | 5 |
|  |  |  |  |  |
| 3. | a. | Discuss in detail on the 10 principles of Sanitary design. | CO2,CO3 | 14 |
|  | b. | Briefly discuss on the criteria to be followed while hygienically designing pipes and joints. | CO3 | 6 |
| (OR) | | | | |
| 4. |  | What is a scope? A budding entrepreneur wants to set up a bakery unit near Chennai. Can you discuss the various criteria for setting such a unit? | CO3 | 20 |
|  |  |  |  |  |
| 5. | a. | Differentiate between Process and Product Layout. | CO2 | 4 |
|  | b. | Discuss in detail on the criteria to be followed for designing a layout based on Richard Muther’s concept. | CO2,CO3 | 16 |
| (OR) | | | | |
| 6. |  | A meat processing company wants to develop a FSMS. As an employee, you are asked to design the PRP and HACCP protocol. Develop a preliminary protocol, based on the principles of HACCP system. | CO2,CO3 | 20 |
|  |  |  |  |  |
| 7. |  | Mr. ABA plans to set up a plant manufacturing tomato concentrate. The cost of the evaporator (10 kg/h) his friend bought for his concern was Rs. 7 Lakhs in 2001. 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 2001 = 394.3 and for 2017= 561. | CO1 | 20 |
| (OR) | | | | |
| 8. | a. | Discuss briefly on the fixed costs that contribute to the overall manufacturing costs of a product. | CO1 | 8 |
|  | b. | What is depreciation? Discuss in detail on the methods of determining depreciation. | CO1 | 12 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | What is a cash flow diagram? | CO1 | 2 |
|  | b. | With the help of a neat diagram, explain the various aspects of the cash flow diagram. | CO1 | 8 |
|  | c. | With respect to profitability analysis, write short notes on –  i. Rate of return on investment. ii. Discounted Cash flow. | CO1,CO3 | 10 |

ALL THE BEST