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 – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14FP3003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **TECHNOLOGY OF FOOD FLAVOURANTS & COLOURANTS** | **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. | What is flavour enhancer and flavour modifier? Discuss with examples. | CO1 | 8 |
| b. | Describe the biogenesis of fruit flavour through carbohydrate metabolism. | CO1 | 12 |
| (OR) | | | | |
| 2. | a. | Describe the biogenesis of fruit flavour through protein metabolism. | CO1 | 10 |
| b. | Explain how the tastes felt by the tongue are transmitted into the brain and also explain the various tastes. | CO1 | 10 |
| 3. | a. | Elaborate on the development of flavours during food processing. | CO1 | 5 |
|  | b. | Describe the biogenesis of fruit aroma by fat metabolism. | CO1 | 5 |
|  | c. | Discuss the chemicals causing pungency, astringency and cooling effect in food. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the chemistry and extraction of cochineal pigments. | CO1 | 10 |
|  | b. | Explain the production of flavour through microbial method. | CO1 | 10 |
| 5. | a. | How the monascus pigments are produced through fermentation route and what is its advantage of solid state fermentation over submerged culture. | CO1 | 10 |
|  | b. | Elaborate on the structure relationship of odor with suitable examples. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | What is caramel and describe its manufacture on large scale. What are its applications? | CO1 | 10 |
|  | b. | Explain the principles of e-nose technology and discuss the types of sensor involved. | CO2 | 10 |
| 7. | a. | What are the main advantages of super critical fluid extraction? What are the solvents that are used and what are the effects of the solvents? | CO2 | 10 |
|  | b. | Illustrate on the production of liquid flavorings. | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Discuss in detail on recent developments in the analysis of flavour and colours with specific reference to (i) Head space analysis      (ii) Static and dynamic methods. | CO1 | 12 |
|  | b. | What is tristimulus colorimetry and discuss its application to the food industry? | CO2 | 8 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Write briefly on the functions and applications of classical two dimensional gas chromatography. | CO3 | 10 |
|  | b. | What is curcumin? and describe its manufacture on large scale. | CO2 | 10 |

ALL THE BEST