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 – April / May – 2017**

|  |  |  |  |
| --- | --- | --- | --- |
| **Code :** | **14BT3011** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SUSTAINABLE BIOPROCESS DEVELOPMENT** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. |  | Give an account on beer production. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Detail on the industrial production of wine. | CO1 | 20 |
| 3. | a. | State the economic impact of beer in the U.S. | CO2 | 5 |
|  | b. | Write in detail the commercialization of penicillin. | CO1 | 15 |
| (OR) | | | | |
| 4. |  | Give a detailed account on streptomycin production with its manufacturing process and purification. | CO1 | 20 |
| 5. |  | Discuss the industrial production of vitamin B12. | CO1 | 20 |
| (OR) | | | | |
| 6. |  | Give a detailed accounton the production of bioethanol. | CO3 | 20 |
| 7. |  | Give a detailed account on the production of xanthan gum. | CO4 | 20 |
| (OR) | | | | |
| 8. |  | What is downstream processing? Detail on the production of PHB. | CO4 | 20 |
|  | | **Compulsory**: |  |  |
| 9. |  | Write the industrial production of lysine and state their applications in commercial exploitations. | CO5 | 20 |

ALL THE BEST