**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, HYDERABAD CAMPUS**

**B**

**BIOF212 MICROBIOLOGY LABORATORY**

**COMPREHENSIVE LAB EXMAINATION 10-12-2022**

**Marks: 30M**

**Name: ID No.**

1. Observe the given slide (A/B/C) under the microscope and mention its features only in the table below (BASED ON YOUR SET- A/B/C). [1MX6 = 6M]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Slide Number | Shape of the cells (1M) | Color of the cells (1M) | Identify the Staining technique (1M) | Name the stain  (1M) | Name the decolorizer (1M) | Name the method for fixing cells (1M) |
| B |  |  |  |  |  |  |

1. Observe the given spotter and answer the following questions according to your set no (e.g., A/B/C). [1X6 = 6M]

|  |  |
| --- | --- |
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| Name the test (mention full name) (1M) |  |
| What is importance of this experiment (1M) |  |
| Name the dye used (1M) |  |
| What is the name of the dye in decolorized form (1M) |  |
| Type of milk in the tube (1M) |  |
| Explain the reason for change in dye color (1M) |  |

1. Identify and name the type of microorganism based on the condition in which they thrive and replicate. (3M)
2. **Temp-** **37°C, 0.5% NaCl, pH 7.0**

|  |  |  |  |
| --- | --- | --- | --- |
| Condition | Name based on Temperature [1M] | Name based on Salt conditions [1M] | Name based on pH condition [1M] |
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1. **(I)** Observe the given spotter (based on your set number- A/B/C) thoroughly and mention your answer. Based on the plates observed, mention your answer only in the set provided for spotter set A/B/C. [3M]

|  |  |
| --- | --- |
| Which of the following Strains will grow on the given LB Agar Plate? | B (LB Agar + Streptomycin) (Answer Y/N) |
| Donor [1M] |  |
| Recipient [1M] |  |
| Conjugated [1M] |  |

1. Based on your observation from the bacterial conjugation experiment, (7M)
   * + - 1. **What is the name of the plasmid carried by donor strain? Why the donor strain is named so, what does it donate? [1M + 2M =3M]**
         2. **Name the bacterial structure that allows Conjugation? [1M]**
         3. **Explain the basis for peculiar antibiotic resistance pattern observed for Donor, recipient and Conjugated strain. [3M]**
2. Observe the given spotter set thoroughly and mention your answer. (5M)
3. **What is the name of the structure in the plate provided as spotter? [1M]**
4. **Name the organism and its life cycle stage responsible for these structures. [1+1 =2M]**
5. **Calculate the PFU/ml taking the dilution and volume into consideration? (1M for clearly writing the formula used and 1M for finding the correct answer) [2M]**