

**B.Sc. FOOD SCIENCE & TECHNOLOGY**  
**Second Semester**  
**FOOD PLANT LAYOUT**  
**(BFST – 203)**

**Duration: 3Hrs.**

**Full Marks: 70**

Part-A (Objective) =20  
Part-B (Descriptive) =50

**(PART-B: Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**Answer any four from *Question no. 2 to 8***  
***Question no. 1 is compulsory.***

1. What are the factors involved in selecting a plant layout location? Discuss briefly. (10)
2. Describe the sedimentation process in waste water treatment. (10)
3. What type of waste water treatment you want to use in liquid milk processing industry and describe the treatment process? (10)
4. Write short notes on— (5+5=10)  
a) CIP system      b) Capital Investment
5. Answer the following: (5+5=10)  
i. How will you select a suitable plant layout for a food product?  
ii. How would you investigate the traffic condition of a sit for food plant?
6. What is Pollutant? What are the types? Explain how pollution can be controlled. (2+4+4=10)
7. Write short notes on the followings: (5+5=10)  
i. Irradiation  
ii. Pest control measures in food industry.

8. Answer the following:

(5+5=10)

i. Describe the process of flow sheet synthesis for a food processing plant.

ii. How large companies take the major decision on a site selection? Describe with a schematic diagram.

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**B.Sc. FOOD SCIENCE & TECHNOLOGY**  
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**Duration: 20 minutes**

**Marks – 20**

**(PART A - Objective Type)**

**I. Choose the correct answer:**

**1×20=20**

1. Land filling of sludge is considered beneficial only when the disposal includes.....
  - (a) CO<sub>2</sub>
  - (b) CH<sub>4</sub>
  - (c) H<sub>2</sub>O<sub>2</sub>
  - (d) H<sub>2</sub>SO<sub>4</sub>
2. In 'Bowl Type' centrifugation process for dewatering the percentage solid content increased in the sludge is.....
  - (a) 5 – 6 %
  - (b) 7 – 10 %
  - (c) 10 – 15 %
  - (d) 15 – 20 %
3. Which of the following compounds is used in sludge conditioning?
  - (a) H<sub>2</sub>O<sub>2</sub>
  - (b) H<sub>2</sub>O
  - (c) H<sub>3</sub>PO<sub>4</sub>
  - (d) H<sub>2</sub>SO<sub>4</sub>
4. Primary sedimentation removes suspended solids whose diameter ranges from.....
  - (a) 10<sup>-9</sup> - 10<sup>-6</sup> m.
  - (b) 10<sup>-6</sup> - 10<sup>-4</sup> m
  - (c) 10<sup>-3</sup> - 10<sup>-1</sup> m
  - (d) None of these
5. In flotation method the final air bubbles will form a diameter of.....
  - (a) 50-60 μm
  - (b) 60-40 μm
  - (c) 40-70 μm
  - (d) 40-80 μm
6. Tertiary maturation ponds are also known as.....
  - (a) Aerated ponds
  - (b) Facultative ponds
  - (c) Aerobic ponds
  - (d) Maturation ponds
7. "Space available in vertical and horizontal directions is most effectively utilized" is known as principle of
  - (a) Cubic space utilization
  - (b) Flexibility
  - (c) Flow
  - (d) Minimum distance
8. Full name of CIP, regarding food plant sanitation.....
  - (a) Cleaning in plant
  - (b) Cleaning in power
  - (c) Cleaning in position
  - (d) Cleaning in place
9. Plant location decisions are:
  - (a) Strategic, long term and non-repetitive in nature.
  - (b) Strategic, short term and non-repetitive in nature.
  - (c) Strategic, long-term and repetitive in nature.
  - (d) Not strategic, long-term and repetitive in nature.
10. A material index is:
  - (a) The wt. of localized material used in the finished product divided by the wt. of the finished product.
  - (b) Weight of solid/ Weight of liquid.
  - (c) Weight of finished product/ Weight of raw material.
  - (d) Weight of liquid/ Weight of solid.
11. If the material index is greater than unity, then location should be:
  - (a) Far from the source of raw material.
  - (b) Near to locality.
  - (c) Near to the source of raw material.
  - (d) Far from market.
12. Building designers must bear in mind that, in the food industry, the food processing system distribution is often accomplished in a:
  - (a) Straight line or in L, U, or Z layouts.
  - (b) A, B, C layouts.
  - (c) Circular.
  - (d) M, N, O layouts.
13. FIFO stands for.....
  - (a) Foreign Investor Foreign Outcome
  - (b) First Informed First Out
  - (c) First Instructed First Output
  - (d) First In First Out
14. Ideal plant location should have.....
  - (a) A river near the plant
  - (b) Nearer to the city
  - (c) Proper soil bearing capacity
  - (d) Rapid development surrounding the site
15. GMP stands for.....
  - (a) Good Market Principles
  - (b) Good Manufacturing Practices
  - (c) Good Management Procedures
  - (d) General Manager of Plant
16. The following type of layout is preferred to manufacture a standard product in large quantity
  - (a) Product layout
  - (b) Process layout
  - (c) Fixed position layout
  - (d) Combination layout
17. The following type of layout is preferred for low volume production of non-standard products
  - (a) Product layout
  - (b) Fixed position layout
  - (c) Combination layout
  - (d) Process layout
18. According to FPO home scale production should have installed capacity not more than..... metric tonne /day.
  - (a) 10
  - (b) 5
  - (c) 100
  - (d) 15

19. Height of the roof for small scale industries should be .....feet according to FPO.

- (a) 14 feet (b) 15 feet (c) 10 feet (d) 12 feet

20. According to FPO area of manufacturing should not be more than..... of the manufacturing area.

- (a) 70% (b) 50% (c) 45% (d) 40%

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University of Science and Technology, Meghalaya

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SESSION: 2016-17			
COURSE _____ PAPER Code: _____			
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SEMESTER _____			
<b>Instructions to Candidates</b>		<b>For Objective Type Questions</b>	
<ol style="list-style-type: none"> <li>This answer booklet has 4 pages. Please check before writing whether it is complete or in good condition.</li> <li>Do not write your name anywhere in the answer booklet.</li> <li>Write legibly on both sides of the paper</li> <li>You may use some space for any rough notes or calculation on the answer booklet if you need. These rough notes, calculations must be scored out before submitting the answer booklet.</li> <li>Do not bring any book or loose paper in the examination hall.</li> <li>Do not tear any page from the answer booklet.</li> <li>Do not write anything on the question paper or blotting paper or any pieces of paper while you are in the examination hall.</li> <li>Any act of indiscipline or misbehavior in the examination hall will result in your expulsion.</li> <li>No examinee is allowed to leave the examination hall until 30 minutes lapse after the commencement of the examination.</li> <li>Additional answer sheet will be supplied after the main answer booklet is completed.</li> </ol>	Page No.	Marks	
	Total		
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	Question No.	Marks	
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