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**BRAINWARE UNIVERSITY**

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Term End Examination 2025-2026**Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2022/B.Pharm-2023/B.Pharm-2024****Course Name – Pharmaceutical Engineering****Course Code - BP304T****(Semester III)****Full Marks : 75****Time : 3:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 20=20

1. Choose the correct alternative from the following :

(i) Identify the correct option, on which Reynold's number depends on-

- | | |
|----------------------------|-----------------------------|
| a) Roughness of the pipe | b) Surface area of the pipe |
| c) Viscosity of the liquid | d) Volume of the liquid |

(ii) If, within a pipe, laminar flow has a centre line velocity of 0.1 m/s, select the average velocity.

- | | |
|------------|------------|
| a) 5 cm/s | b) 10 cm/s |
| c) 15 cm/s | d) 20 cm/s |

(iii) Select the portion of pipe, in which the flow of liquid is high.

- | | |
|-----------------------------------|----------------------|
| a) At actual surface of pipe wall | b) Central portion |
| c) Near the pipe wall | d) Transition region |

(iv) Which of the following factor in fluid flow, inertial forces depends-

- | | |
|-------------------------------|--|
| a) Mass | b) Mass & velocity |
| c) Mass, velocity and density | d) Mass, velocity, density & viscosity |

(v) Name the instrument in which the measurement of time of flow is important for determining fluid flow.

- | | |
|-----------------------|------------------|
| a) Displacement meter | b) Orifice meter |
| c) Rotameter | d) Venturi meter |

(vi) Name the one from the following options, that uses a thin plate for the measurement of flow of fluids.

- | | |
|-----------------------|------------------|
| a) Orifice meter | b) Pitot tube |
| c) Displacement meter | d) Venturi meter |

(vii) From the following options, select the instrument that contains a single tapered section for the measurement of flow of fluids.

3. Describe the construction and working of silverson emulsifier. (5)
4. Describe the mechanism of size reduction. (5)
5. Briefly describe about the working and construction about plate and frame filter press. (5)
6. Explain briefly about simple manometer, differential manometer and inclined manometer. (5)
7. Explain the principle, construction, advantages and disadvantages of seidtz filter. (5)

OR

- Explain working and construction of spray dryer with diagram. (5)
8. Explain the construction and working of bag filter. (5)

OR

Explain the various pharmaceutical application of filtration. (5)

Group-C

(Long Answer Type Questions)

10 x 2=20

9. Definition and application of size reduction along with principle and working of hammer mill. (10)
10. Explain about the types of filtration along with mechanism. (10)

OR

Explain the principle, procedure and applications of fractional distillation. (10)