Second Year B. Pharm. Semester III CBCS Pattern
SUBJECT - BPH_C_305_T Pharmaceutical Engineering Theory
Practice Questions & Answer Key

Set - I

1. When principle of conservation of energy is applied to flow of fluids then resulting equation is known as
a) Reynolds number b) Bernoulli's theorem c) Hagen-Poiseuille's equation d) Kick's theory

2. Region between 2100-4000 for Reynolds number is known as …….
a) Turbulent region b) Laminar region c) Safe region d) Critical region

3. In Bernoulli's theorem the Potential energy is also known as ……..
a) Resonance energy b) kinetic energy c) Thermal energy d) Datum energy

4. Which of the following is not a type of energy loss?
a) Friction losses b) Enlargement losses c) Resistance losses d) Losses in fittings

5. Bernoulli's theorem state that the pressure energy, kinetic energy, datum energy at any point of the fluids is……
a) High b) Constant c) Low d) Moderate

6. The SI unit of Energy is……
a) Meter b) Calorie c) Joule d) Kelvin

7. The energy possess by the body virtue of its motion is known as……
a) Kinetic energy b) Potential energy c) Pressure energy d) Solar energy

8. The total energy in Bernoulli's theorem is sum of……..
a) Thermal energy, datum energy, potential energy b) Kinetic energy, potential energy, pressure energy c) Potential energy, thermal energy, resonance energy d) Thermal energy, Datum energy, Frictional energy

9. Which of the following is the type of manometer?
a) Rotamter b) Acute manometer c) Differential manometer d) Thermometer

10. According to Bernoulli's equation, where the speed is high, the pressure will be……

a) High b) Low c) Medium d) No pressure

11. Fundamental equation that relates pressure to fluids speed & height is known as……

a) Speed equation b) Reynolds equation c) Bernoulli's Equation d) Kick's Law

12. When the principle of conservation of energy is applied to the flow of fluids then resulting equation is called……

a) Reynolds number b) Bernoulli's theorem c) Kick's theory d) Hagen–Poiseuille's equation

13. The Bernoulli's theorem is applied in measurement of……..

a) Rate of energy b) Rate of fluid c) Rate of velocity d) Rate of sedimentation

14. The Bernoulli's theorem is applied in working of ……

a) Venturi pump b) Orifice pump c) Centrifugal pump d) Centripetal pump

15. The change in Potential energy is measured as difference of ……

a) mgf b) mgh c) mg d) mgt

16. The fundamental equation that relates pressure to liquid and height is known as……

a) Bernoulli's Equation b) Light Equation c) Speed Equation d) Equation of the continuity

17. If the Reynolds number is less than 2000, the flow in pipe is …….

a) Turbulent b) Laminar c) Transition d) Non-uniform

18. In Pipe flow the critical Reynolds number is……

a) 640 b) 5 c) 2000 d) 64000

19. Anemometer is used to measure……

a) Velocity b) Pressure c) Viscosity d) Internal Energy

20. There is no loss of energy when…….

a) Cross section of pipe enlarges suddenly b) Cross section of pipe reduces suddenly c) Cross section of pipe contracts gradually d) Cross section of pipe enlarges gradually

21. When cross section of pipe changes suddenly loss of energy is due to

a) Air trapped b) Sudden changes in pipe c) Eddies d) Outside air

22. η in Poiseuilles equation is representing……

a) Velocity of fluids b) Viscosity of fluids c) Pressure of fluids d) Density of fluids

23. During flow of fluids..... causes loss in pressure

a) Frictional forces b) Circular motion c) Centrifugal force d) Centripetal force

24. Orifice meter is referred as…….

a) Variable head meter b) Insertion meter c) Variable area meter d) Thermometer

25. The Property of fluid they describe internal resistance it is known as……..

a) Frictional loss b) Shock loss c) Resistance d) Internal Energy

26. Which of the following is major loss?

a. Frictional loss b. Shock loss c. Inlet loss d. Exit loss

27. Which property of fluid account for the major losses in pipe?

a. Density b. Specific gravity c. Viscosity d. Compressibility

28. The frictional resistance for fluid in the motion is…….

a. Proportional to the velocity in laminar flow and to the square of the velocity in turbulent flow

b. Proportional to the Square of the velocity in laminar flow and to the velocity in turbulent flow

c. Proportional to the velocity in both laminar flow and turbulent flow.

d. Proportional to the square of the velocity in both laminar & turbulent flow.

29. The Frictional resistance for fluid in motion is……

a. Inversely proportional to the square of the surface area of its contact.

b. Inversely proportional to the square of the surface Area of contact.

c. Proportional to the square of surface area of contact.

d. Proportional to the surface area of contact

30. The Frictional Resistance For fluid in motion is……

a. Dependent on the pressure for both laminar & turbulent.

b. Independent of the pressure for both laminar & turbulent.

c. Dependent on the pressure for both laminar & independent of the pressure for turbulent flow

d. Independent on the pressure for laminar flow & dependent on the pressure for Turbulent.

31. The device which is used for making the temporary measurement of flow is…….

a. Venturimeter b. Dull flow tube c. Orifice plate d. Discharge tube

32. After the suddenly allow of fluid stream towards the narrow constriction the following will increase.

a. Increase velocity of fluid at orifice meter

b. Increase pressure of the fluid at orifice meter

c. Increase temperature of the fluid at orifice meter

d.Moderate temperature of the fluid at orifice meter

33. The difference in pressure head, ΔH can be read by…….

a. Galvanometer b. Manometer c. Photometer b) Thermometer

34. What is the constant of orifice meter?

a) C_0 b) ΔH c) Both a and b d) U_0

35. Orifice meter is also referred as

a) Venturimeter b) Pitot meter c) Variable head meter d) Rota meter

36. The orifice meter helps us to calculate_____at point A and B.

a) Temperature b) Velocity c) Pressure d) Humidity

37. Orifice meter is_____plate.

a) Thick b) Wide c) Thin d) Broad

38. Choose the formula of orifice meter

a) PV= nRT b) $\sqrt{uv^2-u_0^2}$ c) $u_0 = C_0\sqrt{2g\Delta H}$ d) $u_0 = C_0\sqrt{2g\Delta T}$

39. Pressure of head is denoted by _____

a) ΔP b) ΔH c) ΔPH d) ΔT

40. Orifice meter is part of _____

a) Flow of fluid b) Size reduction c) Size separation d) Venturimeter

41. According to Bernoulli's equation velocity head of_____fluid of pitot tube obtained by which of the following equation

a) $\Delta HP=V^2/ 2g$ b) ΔHP = 2g/V c) ΔHP= 2g/ V× u d) ΔHP= V/2g

42. Pitot tube is used to measure of_____

a) Velocity b) Speed c) Flow d) Density

43. Pitot tube measure velocity_____point only.

a) All b) One c) Two d) End

44. Pitot tube also is known as_____tube.

a) Insertion tube b) Venturi tube c) Connective tube d) Conveyer

45. In pitot tube the direction of flow tube is _____

a) Perpendicular and parallel b) Parallel c) Opposite d) Same

46. Rotameter measure the _____

a) Area of flow b) Cross section of flow c) Height of flow d) Velocity of flow

47. In Rotameter, plummet rises and falls because of_____in flow.

a) Area b) Velocity c) Variation d) Height

48. The upper edge of plummet is used to_____on tapered tube.

a) Weight b) Measure c) Reading d) Flow

49. Rotameter tube is made up of _____

a) Glass b) Wood c) Fiber d) Plastic

50. Rotameter is available with electric and electronic_____for recording.

a) Device b) Database c) System d) Transmitter

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Set – II

1. The fluid flow in which the fluid particles in one layer do not mix with the fluid particles in the other layer iscalled
   A. Laminarflow
   B. Turbulentflow
   C. Layerflow
   D. Unsteady flow
2. The fluid flow in which the fluid particles mixes with the fluid particles in the other layer iscalled
   A. Laminarflow
   B. Turbulentflow
   C. Viscousflow
   D. Streamline flow
3. Reynolds number may be defined as the ratio of one of the followingfactors
   A. Elastic forces to pressureforces
   B. Gravity forces to inertialforces
   C. Inertial forces to viscousforces
   D. Viscous forces to inertialforces
4. Which one of the following experiments is used for the study of flow of fluids ?
   A. Bernoull's

B. Reynolds

C. Stokes

D. Orifice meter

5. Venturi relation in one of application of

A. Bernoulli's equation

B. Speed Equation of continuity

C. equation

D. Light equation

6. Which one of the following uses a thin plate for the measurement of flow of fluids?

A. Orifice meter

B. Rotameter

C. Venturi meter

D. Pilot tube

7. Which one of the following does not require manometer in the construction of flow meters.

A. Orifice meter

B. Rotameter

C. Venturi meter

D. Pilot tube

8. Which one of these is having a single tapered section for the measurement of flow of fluids?

A. Orifice meter

B. Rotameter

C. Venturi meter

D. Pilot tube

9. Which one of the following gives direct visual reading of flow of fluids?

A. Orifice meter

B. Rotameter

C. Venturi meter

D. Pilot tube

10. Pilot tube is also called as

A. Insertion meter

B. Restriction meter

C. Variable head meter

D. Variable area meter

11. Which one of the following distillation methods is known as equilibriumdistillation

A. Flashdistillation

B. Fractionaldistillation

C. Moleculardistillation

D. Simpledistillation

12. Which type of distillation is used for the preparation of aromatic spirit ofammonia?

A. Flashdistillation

B. Fractionaldistillation

C. Moleculardistillation

D. Simpledistillation

13. Which type of distillation is used for the preparation of spirit ofnitrous ether?

A. Flashdistillation

B. Fractionaldistillation

C. Moleculardistillation

D. Simpledistillation

14. Which one of the following distillation methods is known as rectification?

A. Flashdistillation

B. Fractionaldistillation

C. Moleculardistillation

D. Simpledistillation

15. Which one of the following distillation methods is known as short path distillation?

A. Flashdistillation

B. Fractionaldistillation

C. Moleculardistillation

D. Simpledistillation

16. …….is the process of heating a liquid mixture to form vapours and then cooling them to get pure component.

A. Crystallisation

B. Distillation

C. Chromatography

D. Sublimation

17. Falling film molecular still is

A. Distillation apparatus

B. Dryer

C. Filter

D. Evaporator

18. Which distillation method is used for the separation of high boiling substances from non-volatile impurities?

A. Rectification distillation

B. Steam distillation

C. Simple distillation

D. Vacuum distillation

19. Mean free path is associated with

A. Moleculardistillation

B. Simpledistillation

C. Azeotropic distillation

D. Steam distillation

20. Which type of distillation is used for the preparation of water for injection?

A. Flashdistillation

B. Fractionaldistillation

C. Moleculardistillation

D. Simpledistillation

21. Larger the surface area of liquids then evaporation will be

A. Small

B. Large

C. Moderate

D. Very small

22. The changing of a liquid into vapors from the surface of the liquid without heating it is called

A. Expansion

B. Contraction

C. Evaporation

D. Fusion

23. The evaporation from the surface of any liquid depends on

A. Temperature & Wind

B. Wind

C. Nature of liquid, Temperature & Wind

D. Nature of liquid

24. Evaporation causes

A. Cooling

B. Heating effect

C. Increase in weight

D. Increase in density

25. Evaporation takes place at

A. Freezing point

B. Boiling point

C. Melting point & Boiling point

D. Freezing point, Melting point & Boiling point

26. Vertical tube evaporator also called as

A. Short tube evaporator

B. Climbing film evaporator

C. Rising film evaporator

D. Falling film evaporator

27. Rate of evaporation is_____

A. Directly proportional to temperature of liquid

B. Inversely proportional to temperature of liquid

C. Independent of temperature of liquid

D. Directly proportional to humidity of surrounding air

28. Crystallization, evaporation and distillation are a means of?

A. Separating soluble substances in solution

B. Separating insoluble substances in solutions

C. Separating filtrate from solution

D. Concentration

29. The nature of the crystallization process is governed by _____

A. Thermodynamics

B. Kinetic factors

C. Thermodynamics and Kinetic factors

D. Potential energy

30. Crystal phases can be inter-converted by varying _____

A. Temperature

B. Pressure

C. Size

D. Viscosity

31. Insoluble impurities from solution during crystallization are removed by _____

A. Drying
B. Filtration
C. Heating
D. Cooling

32. Bernoullis equation can be derived from conservation of

A. Energy
B. Mass
C. Angular momentum
D. Mass & Angular Momentum

33. Manometer is used to measure

A. Fluid flow
B. Fluid pressure
C. Temperature
D. Pressure

34. The process of deterioration of a metal due to unwanted chemical or electrochemical interaction of the metal with its environment is called _____

A. Electrolysis
B. Electrodialysis
C. Corrosion
D. Deposition

35. Which of the following is an example of corrosion?

A. Rusting of iron

B. Tarnishing of silver

C. Liquefaction of ammonia

D. Rusting of iron and tarnishing of silver

36. Chemical action during corrosion converts metal into metallic component as _____

A. Hydroxide

B. Oxide

C. Sulphate

D. Hydroxide, Oxide and Sulphate

37. Which of the following corrosions are caused due to velocity of fluid flow in pipes?

A. Bimetal corrosion

B. Cavitation corrosion

C. Galvanic corrosion

D. Intergranular corrosion

38. The erosion corrosion can be controlled by _____

A. Increasing the flow velocity through pipes

B. Increasing temperature of fluid

C. Decreasing temperature of fluid

D. Minimizing turbulence

39. Electrochemical corrosion takes place on

A. Anodic area

B. Cathodic area

C. Near cathode

D. Near anode

40. Which of the following is also called velocity accelerated corrosion?

A. Impingement attack or corrosion

B. Erosion corrosion

C. Pitting corrosion

D. Galvanic corrosion

41. The radiation emitted by black body is known as

A. Black radiation

B. Full radiation

C. Total radiation & Full radiation

D. Black radiation, Full radiation and Total radiation

42. Unit of the rate of heat transfer is

A. Joule

B. Newton

C. Pascal

D. Watt

43. The Stefan Boltzman law states that

A. $E \alpha T$

B. $E \alpha T^2$

C. $E \alpha T^3$

D. $E \alpha T^4$

44. The body which absorbs all radiations incident upon it, is called as

A. Black body

B. White body

C. Opaque body

D. Transparent body

45. If the body is at thermal equilibrium, then the
   A. Emissivity = absorptivity
   B. Emissivity > absorptivity
   C. Emissivity < absorptivity
   D. Emissivity ≤ absorptivity

46. The selection of a material for the construction of equipment depends on the following properties
   A. Chemical resistance & Structural strength
   B. Structural strength & Ease of fabrication
   C. Ease of fabrication & Chemical resistance
   D. Chemical resistance, Structural strength & Ease of fabrication

47. Physical factors influencing selection of materials for the construction of equipment are
   A. Strength & Mass
   B. Mass & Strength & Wear properties
   C. Thermal expansion & Mass
   D. Wear properties, Strength, Mass & Thermal expansion

48. Which of the following is not a ferrous metal
   A. Cast iron

B. Steel carbon

C. Stainless steel

D. Aluminum

49. Which of the following is not a non-ferrous metal

A. Tin

B. Lead

C. Stainless steel

D. Aluminum

50. Which of the following is a non-metal

A. Tin

B. Lead

C. Plastic

D. Aluminum

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Answer Key

Set – I				**Set - II**			
Q. No.	Correct Option	Q. No.	Correct Option	Q. No.	Correct Option	Q. No.	Correct Option
1	b	27	c	1	a	27	a
2	d	28	a	2	b	28	a
3	d	29	d	3	c	29	c
4	c	30	b	4	b	30	a
5	b	31	c	5	a	31	b
6	c	32	a	6	a	32	a
7	a	33	b	7	b	33	d
8	b	34	a	8	b	34	c
9	c	35	c	9	b	35	d
10	b	36	b	10	a	36	d
11	c	37	c	11	a	37	b
12	b	38	c	12	d	38	d
13	a	39	b	13	d	39	a
14	c	40	a	14	b	40	a
15	b	41	a	15	c	41	d
16	a	42	c	16	b	42	d
17	b	43	b	17	a	43	d
18	c	44	a	18	b	44	a
19	a	45	a	19	a	45	a
20	d	46	a	20	d	46	d
21	c	47	c	21	b	47	d
22	b	48	c	22	c	48	d
23	a	49	a	23	c	49	c
24	a	50	d	24	a	50	c
25	a			25	d		
26	a			26	a		