

Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - Fluid Mechanics & Machinery

Course Code - DME405

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Answer all the questions. Each question carry one mark.

9. 1.The specific gravity of a liquid has

Mark only one oval.

- The same unit as that of mass density
- The same unit as that of weight density
- The same unit as that of specific volume
- No unit

10. 2.The specific volume of a liquid is the reciprocal of

Mark only one oval.

- weight density
- specific weight
- mass density
- specific volume

11. 3. Which one of the following is the unit of specific weight?

Mark only one oval.

- $N = m^3$
- $N = m^2$
- $N = m$
- $N = ms$

12. 4.The ratio of specific weight of a liquid to the specific weight of pure water at a standard temperature is called

Mark only one oval.

- density of liquid
- specific gravity of liquid
- compressibility of liquid
- surface tension of liquid

13. 5.The specific gravity of water is taken as

Mark only one oval.

0.001

0.01

0.1

1

14. 6.The specific weight of sea water is that of the pure water.

Mark only one oval.

same as

less than

more than

none of these

15. 7.The specific gravity of oil whose specific weight is 7.85 kN/m^3 , is

Mark only one oval.

0.8

1

1.2

1.6

16. 8.The property of a liquid which offers resistance to the movement of one layer of liquid over another adjacent of liquid is called

Mark only one oval.

- surface tension
- compressibility
- capillarity
- viscosity

17. 9.Mercury does not wet the glass. This is due to property of the liquid known as

Mark only one oval.

- cohesion
- adhesion
- viscosity
- surface tension

18. 10.The intensity of pressure at any point, in a liquid, is

Mark only one oval.

- directly proportional to the area of the vessel containing liquid
- directly proportional to the depth of liquid from the surface
- directly proportional to the length of the vessel containing liquid
- inversely proportional to the depth of liquid from the surface

19. 11.The pressure at a point 4 m below the free surface of water is

Mark only one oval.

19.24 kPa

29.24 kPa

39.24 kPa

49.24 kPa

20. 12.The pressure measured with reference to atmospheric pressure is called

Mark only one oval.

atmospheric pressure

gauge pressure

absolute pressure

mean pressure

21. 13.A piezometer tube is used only for measuring

Mark only one oval.

low pressure

high pressure

moderate pressure

vacuum pressure

22. 14.differential manometer is used to measure

Mark only one oval.

- atmospheric pressure
- pressure in channels
- pressure in venturimeter
- the difference of pressures between two points in a pipe

23. 15.The liquid used in manometers should have

Mark only one oval.

- low density
- high viscosity
- low surface tension
- high surface tension

24. 16.Which of the following is not a type of positive displacement pumps?

Mark only one oval.

- Reciprocating pump
- Rotary displacement pump
- Centrifugal pump
- None of the these

25. 17.Rotary displacement pumps are suitable for handling

Mark only one oval.

- oils
- gritty liquids
- both oils as well as gritty liquids
- none of the these

26. 18.For flood control and irrigation applications, the pump generally used is

Mark only one oval.

- centrifugal type
- screw type
- axial flow type
- reciprocating type

27. 19.Centrifugal pump is a

Mark only one oval.

- turbomachinery
- flow regulating device
- drafting device
- intercooling device

28. 20.Centrifugal pumps transfer energy from

Mark only one oval.

- rotor to fluid
- fluid to rotor
- draft to rotor
- rotor to draft

29. 21.The fluid coming into the centrifugal pump is accelerated by

Mark only one oval.

- throttle
- impeller
- nozzle
- governor

30. 22.In a centrifugal pump casing, the flow of water leaving the impeller is

Mark only one oval.

- radial flow
- free vortex motion
- forced vortex
- none of the these

31. 23. In a centrifugal pump, the liquid enters the pump

Mark only one oval.

- at the top
- at the bottom
- at the centre
- from sides

32. 24. The casing of a centrifugal pump is designed so as to minimize

Mark only one oval.

- friction loss
- cavitation
- loss of kinetic energy
- starting time

33. 25. Centrifugal pumps dealing with muds have an impeller of the type

Mark only one oval.

- open
- double suction
- one-side shrouded
- two-side shrouded

34. 26. In a centrifugal pump, the inlet angle will be designed to have

Mark only one oval.

- relative velocity vector in the radial direction
- absolute velocity vector in the radial direction
- the velocity of flow to be zero
- peripheral velocity to be zero

35. 27. The ratio of the rotor power to the shaft power is known as

Mark only one oval.

- mechanical efficiency
- volumetric efficiency
- manometric efficiency
- overall efficiency

36. 28. The process of filling the liquid into the suction pipe and the pump casing up to the level of the delivery valve is called

Mark only one oval.

- filling
- pumping
- priming
- levelling

37. 29.To avoid cavitation in the centrifugal pump

Mark only one oval.

- suction pressure should be low
- delivery pressure should be low
- suction pressure should be high
- delivery pressure should be high

38. 30.Low specific speed of a pump implies it is

Mark only one oval.

- centrifugal pump
- axial flow pump
- mixed flow pump
- none of the these

39. 31.Braking jet in an impulse turbine is used

Mark only one oval.

- to break the jet of water
- to bring the runner to rest in a short time
- to change the direction of runner
- none of these

40. 32. An impulse turbine is used for

Mark only one oval.

- Low head of water
- High head of water
- Medium head of water
- High discharge

41. 33. The hydraulic efficiency of an impulse turbine is the

Mark only one oval.

- ratio of the actual power developed by the turbine to the energy actually supplied by the turbine
- ratio of the actual work available at the turbine to the energy imparted to the wheel
- ratio of the work done on the wheel to the energy of the jet
- none of these

42. 34. The hydraulic efficiency of an impulse turbine is maximum when velocity of wheel is of the jet velocity.

Mark only one oval.

- one-fourth
- one-half
- three-fourth
- double

43. 35.The width of the bucket for a Pelton wheel is generally the diameter of jet.

Mark only one oval.

- double
- three times
- four times
- five times

44. 36.The jet ratio is defined as the ratio of the

Mark only one oval.

- diameter of the jet to the diameter of Pelton wheel
- velocity of jet to the velocity of Pelton wheel
- diameter of Pelton wheel to the diameter of jet
- velocity of Pelton wheel to the velocity of jet

45. 37.In a reaction turbine, the draft tube is used

Mark only one oval.

- To run the turbine fully
- To prevent the air and enter the turbine
- To increase the head of water by an amount equal to the height of the runner outlet top the tailrace.
- To transport water to upstream.

46. 38. In an inward flow reaction turbine

Mark only one oval.

- the water flows parallel to the axis of the wheel
- the water enters the centre of the wheel and then flows towards the outer periphery of the wheel
- the water enters the wheel at the outer periphery and then flows towards the centre of the wheel
- the flow of water is partly radial and partly axial

47. 39. The speed of an imaginary turbine, identical with the given turbine, which will develop a unit power under a unit head, is known as

Mark only one oval.

- normal speed
- unit speed
- specific speed
- none of these

48. 40. Which of the following turbine is preferred for 0 to 25 m head of water?

Mark only one oval.

- Pelton wheel
- Kaplan turbine
- Francis turbine
- none of these

49. 41.Which one of the following is a major loss?

Mark only one oval.

- Frictional loss
- Shock loss
- Entry loss
- Exit loss

50. 42.The frictional resistance for fluids in motion is

Mark only one oval.

- proportional to the velocity in laminar flow and to the square of the velocity in turbulent flow
- proportional to the square of the velocity in laminar flow and to the velocity in turbulent flow
- proportional to the velocity in both laminar flow and turbulent flow
- proportional to the square of the velocity in both laminar flow and turbulent flow

51. 43.On which of the factors does the co-efficient of bend in a pipe depend?

Mark only one oval.

- Angle of bend and radius of curvature of the bend
- Angle of bend and radius of the pipe
- Radius of curvature of the bend and pipe
- Radius of curvature of the bend and pipe and angle of bend

52. 44. Hydraulic gradient line takes into consideration

Mark only one oval.

- potential and kinetic heads only
- potential and pressure heads only
- kinetic and pressure heads only
- potential, kinetic and pressure heads

53. 45. What is the total loss developed in a series of pipes?

Mark only one oval.

- Sum of losses in each pipe only
- Sum of local losses only
- Sum of local losses plus the losses in each pipe
- Zero

54. 46. How do we determine the total discharge through parallel pipes?

Mark only one oval.

- Add them
- Subtract them
- Multiply them
- Divide them

55. 47. Where is a water hammer developed?

Mark only one oval.

- Reservoir
- Penstock
- Turbine blades
- Pipe line

56. 48. What is the function of a surge tank?

Mark only one oval.

- It causes water hammer
- Produces surge in the pipeline
- Relieves water hammer
- Supplies water at constant pressure

57. 49. Minor losses occur due to

Mark only one oval.

- sudden enlargement in the pipe
- sudden contraction in the pipe
- bends in pipe
- all of these

58. 50.The head loss through fluid flowing pipe due to friction is

Mark only one oval.

- the minor loss
- the major loss
- both a. and b.
- none of these

59. 51.For a fully-developed pipe flow, how does the pressure vary with the length of the pipe?

Mark only one oval.

- Linearly
- Parabolic
- Exponential
- Constant

60. 52.Which of the factors primarily decides whether the flow in a circular pipe is laminar or turbulent?

Mark only one oval.

- The Prandtl Number
- The Pressure gradient along the length of the pipe
- The dynamic viscosity coefficient
- The Reynolds Number

61. 53.How is Reynolds number defined as?

Mark only one oval.

- The ratio of pressures in the inlet to the outlet of a pipe
- The product of velocity of the flow and the diameter of the pipe, divided by the kinematic viscosity of fluid
- The product of the density of the fluid, the velocity of the flow and the diameter of the pipe, divided by the dynamic viscosity of the fluid
- The ratio of inertia force to viscous force

62. 54.How should be the viscosity of the flowing fluid for laminar flow?

Mark only one oval.

- The viscosity of the fluid should be as low as possible, for laminar flow
- The viscosity of the fluid should be as high as possible, for laminar flow
- Change in viscosity of the flowing fluid does not affect its flow
- Unpredictable

63. 55.What type of flow can be taken for granted in a pipe of a uniform cross-section?

Mark only one oval.

- steady
- unsteady
- uniform
- non-uniform

64. 56. Reciprocating pump is a _____

Mark only one oval.

- Negative displacement pump
- Positive displacement pump
- Diaphragm pump
- Emulsion pump

65. 57. Reciprocating pumps operate by drawing _____ into the chamber

Mark only one oval.

- Liquid
- Pressure
- Heat
- Electricity

66. 58. The higher discharge valve line holds the discharge valve _____

Mark only one oval.

- Open
- Closed
- Stop functioning
- Automatic

67. 59. Reciprocating pumps are classified according to _____

Mark only one oval.

- Drag force
- Number of cylinders
- Shock waves
- Flow speed

68. 60. Internal cavitation in reciprocating pumps occurs due to _____

Mark only one oval.

- Drag force
- Cyclic stress
- Shock waves
- Flow speed

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