# 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

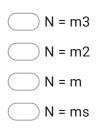
- The same unit as that of mass density
- The same unit as that of weight density
- The same unit as that of specific volume
- No unit

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?

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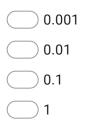


12. 4.The ratio of specific weight of a liquid to the specific weight of pure water at a standard temperature is called

- 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.



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

Mark only one oval.

$\square$	same as
$\subset$	less than
$\subset$	) more than
	) none of these

15. 7.The specific gravity of oil whose specific weight is 7.85 kN/m3, is



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.

$\bigcirc$	cohesion
$\bigcirc$	adhesion
$\bigcirc$	viscosity

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

- 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 pressuregauge pressure
- \_\_\_\_\_ absolute pressure
- 🔵 mean pressure
- 21. 13.A piezometer tube is used only for measuring

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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

- 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.

$\bigcirc$	throttle
$\bigcirc$	impeller
$\bigcirc$	nozzle
$\bigcirc$	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.

$\subset$	friction loss
$\square$	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
- olumetric 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

- \_\_\_\_\_ 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

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

- one-fourth
- one-half
- three-fourth
- \_\_\_\_ double

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

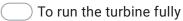
Mark only one oval.

- 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.



 $\bigcirc$  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 entre 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?

- 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

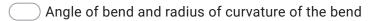
proportional to the square of the velocity in laminar flow and to the velocity in turbulent flow

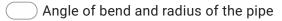
proportional to the velocity in both laminar flow and turbulent flow

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.





 Radius	of	curvature	of the	bend	and	pipe
 	• •		• • • • • •			P . P .

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?

- 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

- 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 crosssection?

- 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
- 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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