ECAT Pre General Science Physics Chapter 6 Fluid Dynamics Online Test

Sr	Questions	Answers Choice
1	The analysis of fluid motion becomes simplified by using	A. law of conservation B. law of conservation of energy C. both of them D. none of them
2	The law of conservation of mass gives us the	A. equation of continuity B. Bernoulli's theorem C. both of them D. none of them
3	The law of conservation of energy gives us	A. equation of continuity B. Bernoulli's theorem C. both of them D. none of them
4	The effect of friction between different layers of a flowing fluid is described in terms of	A. motion of fluid B. nature of fluid C. colour of fluid D. viscosity of fluid
5	How much force is required to slide one layer of the liquid over the other layer is measured by	A. friction B. density C. viscosity D. resistivity
6	Substances that do not flow easily have	A. large coefficient of viscosity B. small coefficient of viscosity C. either of them D. none of them
7	Substances that flow easily have	A. large coefficient of viscosity B. small coefficient of viscosity C. either of them D. none of them
8	Liquids and gasses have	A. zero viscosity B. non-zero viscosity C. very large viscosity D. very small viscosity
9	An object moving through a fluid experiences a retarding force called a	A. frictional force B. terminal force C. opposing force D. drag force
10	When the speed of a body in a fluid increases then the drag force	A. decreases B. becomes zero C. increases D. non of them
11	According to slok's law, drag force depends on	A. Radius of the spherical body B. Terminal velocity of body C. Coefficient of viscosity D. All of above
12	The maximum drag force on a falling sphere is 9.8 N, it weight is	A. 1 N B. 9.8 N C. 4.9 N D. Cannot be calculated
13	At low speeds, the drag force is	A. proportional to speed B. inversely proportional to speed C. not simply proportional to speed D. none of them
14	When a water droplet falling freely through air, the drag force on water droplet increases with th	A. decrease in speed B. increase in speed C. pressure D. none of them
15	When a water droplet falls through air, the net force on it is	A. Net force = drag force - weight B. Net force = weight - drag force C. Net force = drag force + weight D. Net force = weight + drag force

16	When weight of an object falling freely becomes equal to the drag force, then the body will move with	A. increasing speed B. decreasing speed C. constant speed D. none of them
17	During the free fall motion of an object, when its weight becomes equal to the drag force, then it will move with	A. maximum speed B. zero speed C. maximum speed D. none of them
18	The body will move with terminal velocity when it acquires	A. minimum speed B. zero speed C. maximum speed D. none of them
19	At the starting point of the free fall motion of an object, its acceleration will be	A. maximum B. minimum C. zero D. none of them
20	The terminal velocity of water droplet of radius 1 x 10^{-4}m and desity 1000 kg m^{-3}descending through air of viscosity 19 x 10^{-6}kg. m^{-1} s^{-1} is	A. 2.5 ms⁻¹ B. 3.2 ms⁻¹ C. 4.3 ms⁻¹ D. 1.1 ms⁻¹
21	A water hose with an internal diameter of 20 mm at the outlet discharges 30 kg of water in 60 s. What is water speed at the outlet if density of water is 1000 kg/m^3during its steady flow	A. 1.3 m/s B. 1.6 m/s C. 1.9 m/s D. 2.2 m/s
22	The direction of the streamlines is the same as the direction of the	A. force B. torque C. velocity D. weight
23	When the different streamlines cannot cross each other, then this condition is known as	A. continuity condition B. turbulent flow condition C. steady flow condition D. none of them
24	When each particle of the fluid moves along a smoth path, this path is known as	A. straight path B. smooth path C. haphazard path D. steamline
25	During the steady flow, different streamlines	A. cannot across each other B. can across each other C. either of them D. neither of them
26	If every particle of the flow that passes a particular point, moves along the same path as followed by particles which passed the point earlier, then this flow is said to be	A. turbulent B. streamline C. abrupt D. none of them
27	When a fluid is in motion, its flow can be considered as	A. turbulent B. streamline C. either or them D. neither of them
28	According to the equation of continuity, when water falls from the tap, it's speed increases and its cross-sectional area	A. decreases B. increases C. becomes zero D. none of them
29	The product of cross-sectional area of the pipe and the fluid speed at any pint along the pipe is	A. very high B. very low C. constant D. zero
30	The product of cross-sectional area of the pipe and the fluid speed at any point along the pipe is called	A. constant rate B. volume rate C. flow rate D. steady rate
31	If the flow is incompressible and the flow is steady then the mass of the fluid through the pipe	A. increases B. decreases C. becomes zero D. is conserved
32	The fluid is incompressible, if itsdensity is	A. zero B. constant C. very high D. very small
33	When there is no internal frictional forces between the adjacent layers of fluid, then the fluid is called	A. incompressible B. compressible C. viscous

	fluid is called	D. non viscous
34	The irregular and unsteady flow of the fluid is called	A. turbulent flow B. steady flow C. either of them D. both of them
35	Above a certain velocity of a fluid is called	A. turbulent flow B. steady flow C. either of them D. both of them
36	The equation of continuity is	A. A₁A_{2 = V}₁V₂ B. A_{1/}_V_{1 =}A_{2/}V₂ C. _V_{1/}A₁₌V_{2/}A₂ D. A₁_V_{1 =}A₂_V₂
37	A tube tapers from 20 cm diameter to 2 cm, the velocity at first cross-section is 50 ms^{-1}then velocity at second cross-section is	A. 5000 cms⁻¹ B. 500 cms⁻¹ C. 50 cms⁻¹ D. 0.5 cm/s
38	The smooth or steady streamline flow is known as	A. laminar flow B. turbulent flow C. both of them D. none of them
39	The un-steady streamline flow is called	A. laminar flow B. turbulent flow C. both of them D. none of them
40	Rate of flow can be expressed in	A. litre/sec B. litre-sec C. sec/litre D. sec/litre-m
41	The mass of fluid passing through any cross-section per unit time is called	A. electric flux B. magnetic flux C. mass flux D. none of them
42	The pressure will change in the pipe, as the fluid moves through that pipe of varying	A. cross-section B. height C. none of them D. both of them
43	Bernoulli's equation is the fundamental equation in fluid dynamics, which relates pressure to fluid	A. speed B. height C. none of them D. both of them
44	In deriving the Bernoulli's equation, we assume that the fluid is	A. incompressible B. no viscous C. flows in a steady manner D. all of them
45	The velocity gained by the fluid in falling through the distance ($h_{1 - h2}$) under the action of gravity is equal to the speed of the action of gravity is equal to the speed of the	A. orifices B. efflux C. fluid D. none of them
46	According to the Bernoulli's equation, where the speed of the fluid is high, the pressure will be	A. low B. zero C. high D. all of them
47	Where the streamlines are very close to each other, the pressure will be	A. low B. zero C. high D. all of them
48	Where the streamlines are very far apart from each other, the pressure will be	A. low B. zero C. high D. all of them
49	If one of the pipes has a much smaller diameter than the other and are placed horizontally then form both sides of Bernoulli's equation, we can drop the term	A. P B. 1/2 fv² C. pgh D. none of them

50	A device used to measure the speed of liquid flow is known as	A. barometer B. speedometer C. sphygmomanometer D. venture-meter
51	Blood is an	A. Compressible fluid B. incompressible fluid C. hard D. none of them
52	The density of blood is nearly equal to that of	A. mercury B. sodium C. water D. honey
53	A high concentration of red blood cells increases its viscosity from	A. 3 - 5 times that of mercury B. 5 - 8 times that of mercury C. 3 - 5 times that of water D. 5 - 8 times that of water
54	Blood vessels can be stretch like rubber, therefore they are	A. rigid B. hard C. very thick D. not rigid
55	Under normal circumstances, the volume of blood is sufficient to keep the vessels	A. flatted for all times B. inflated for all times C. inflated for small times D. none of them
56	The internal pressure of the blood is	A. less than the external atmospheric pressure B. greater than the external atmospheric pressure C. equal to the external atmosphericpressure D. none of them
57	In a normal healthy person the value of systolic pressure is	A. 75 torr B. 80 torr C. 120 torr D. all of them
58	In a normal healthy person the value of diastolic pressure is	A. 75 - 80 torr B. 100 torr C. 120 torr D. none of them
59	One torr is equal to	A. 13.33 N/m² B. 760 N/m² C. 760 mm Hg D. 133.3 N/m²
60	Blood pressure is measured by the instrument	A. stethoscope B. sphygmomanometer C. barometer D. none of them
61	The blood pressure of a person	A. decrease with age B. increase with age C. has no effect with age D. none of them
62	According to the Bernoulli's theorem the pressure velocity are	A. equal to each other B. proportional to each other C. inversely proportional to each other D. none of them
63	The instrument which detects the instant at which external pressure becomes equal to the systolic pressure is	A. stethoscope B. thermometer C. manometer D. barometer
64	Fluid A is more viscous than fluid B. While flowing through a pipe of the same dimensions and material which fluid takes longer to travel at 25°C?	A. fluid B B. fluid A C. both take the same time D. not possible to determine from given information
65	The value of viscosity of a fluid is dependent on (at constant temperature)	A. the fluid itself B. the fluid and its container C. anything in contact with the fluid D. all of the above
66	Bernoulli's equation is applicable for	A. turbulent flow B. streamline flow C. both (a) and (b) D. all kinds of flows

67	Viscosity is defined as	A. the friction between fluid and its container's walls B. the internal friction between two layers of fluid C. the resistance to flow a fluid experiences D. the extent to which outside factors effect the fluid's flow
68	Which of the following options states the names of fluids in the order of increasing viscosity?	A. mercury, motor oil, methanol B. methanol, mercury, motor oil C. motor oil, mercury, methanol D. methanol, motor oil, mercury
69	What are the SI base units of the coefficient of viscosity	A. Kg m s⁻² B. kgm² s⁻² C. Kg m s⁻¹ D. kg m⁻¹s⁻¹
70	Which of the following has the greatest coefficient of viscosity?	A. water B. gasoline C. honey D. tar
71	Which of the following options correctly states the equation of continuity for an ideal fluid?	A. A₁A₂= V₁V₂ B. A₁/A₂= V₂/V₁ C. A₁/A₂= V₁/V₂ D. none of the above
72	The value for systolic blood pressure for a normal healthy person is	A. 140 torr B. 80 torr C. 90 torr D. 120 torr
73	Which of the following is a characteristic of an ideal fluid?	A. it is non-viscous B. it is incompressible C. it's motion is steady D. all of the above
74	The flow of an ideal fluid is	A. streamline flow B. incompressible flow C. non-viscous D. all of the above
75	Fluids have three types of energies. The Bernoulli's equation combines those energies.which of the following is one of the three enrgies possessed by a fluid?	A. potential energy B. pressure energy C. strain energy D. (a) and (b) only
76	Blood pressure is measured in torr. Which of the following units could belong to torr?	A. N m⁻¹ B. N m⁻² C. N m D. N⁻¹m⁻²
77	What is another name for laminar flow?	A. streamline B. unsteady flow C. turbulent flow D. both (a) and (b)
78	The equation of continuity $A_1V_1 = A_2V_2$is for the flow of	A. an ideal fluid B. an incompressible fluid C. a non visconcous fluid D. all of the above
79	A fluid at a certain point has 50 J of potential energy per unit volume, 75 J of kinetic energy per unit volume,and 35 J of pressure energy per unit volume. the total energy of the fluid is	A. 125 J B. 90 J C. 160 J D. 85 J
80	Matter is made up of very tiny particles called	A. Atoms B. Molecules C. Ions D. None of these
81	The SI unit of viscosity is	A. kg m⁻¹s⁻¹ B. kg ms⁻¹ C. kg m⁻¹s⁻² D. kg m⁻¹s
82	The velocity of falling raindrop attains limited value because of	A. Up trust of air B. Viscous force exerted by air C. Surface tension effect D. Air currents atmosphere
		A. Increases for both B. Decreases for both

83	With increase of temperature, the viscosity of liquid and gases	B. Decreases for both C. Increases for liquids and decreases for gases D. Decreases for liquids and increases for gases
84	Bernoulli's equation is based upon law of conservation	A. Mass B. Momentum C. Energy D. None of these
85	Bernoulli's equation is important in the field of	A. Electrical circuit B. Magnetism C. Photoelectric effect D. Flow of fluids
86	The application of Bernoulli's equation is	A. Torricelli's theorem B. Venture relation C. Binomial theorem D. Both a and b
87	With the increase of temperature viscosity	A. Increase B. Decrease C. Remains same D. Doubles
88	The smooth or steady stream-line flow is know as	A. Laminar flow B. Turbulent flow C. Both a and b D. None of the above
89	In the case of an incompressible fluid in stead flow the net rate of flow of mass entering one end of the tube of flow is equal to the net rate of flow of mass leaving the other end. This equation is called	A. Quadratic equation B. Equation of discontinuity C. Equation of continuity D. None of the above
90	In Bernoulli's theorem the relation between velocity and pressure is	A. Inverse B. Direct C. None of the above D. Both a and b
91	The velocity of falling raindrops attains limited value because of	A. Up thrust of air B. Air currents of the earth atmosphere C. Surface tension effect D. Viscous force exerted by air
92	The terminal velocity of a small size spherical body of radius R moving in a fluid varies as	A. R B. R² C. 1/R D. (1/R)²
93	Bernoulli's equation is based upon law of conversation	A. Mass B. Momentum C. Energy D. None of these
94	Surface tension of water is due to	A. Inter molecular attractions B. Inter molecular spaces C. Inter molecular repulsion D. None of above
95	A person standing near the track of a fast moving train has tendency to fall towards it because of	A. Vibration due to motion of train B. Gravitation force of attraction between person and trains C. The high speed of train D. Some other effect
96	Ball pen functions on the principle of	A. Viscosity B. Boyle's law C. Gravitational force D. Surface tnesion
97	According to Stoke's law, drag force depends on	A. Initial velocity B. Final velocity C. Terminal velocity D. Instantaneous velocity
98	Blood has a density	A. Equal to water B. Greater then water C. Lesser then water D. None of these
99	The pressure will be low where the speed of the fluid is	A. Zero B. High C. Low D. Constant
		A. The blood pressure increase at

100	At high altitude the blood oozes out of the nose and ear because	A. The blood pressure increase at high altitudes B. The percentage of oxygen in the air increase C. The atmospheric pressure decrease there D. The density of blood decrease at high altitudes
101	Internal friction of fluid is called	A. Surface tension B. Viscosity C. Resistance D. Cohesive force
102	In a container having water filled up to a height h, a hole is made in the bottom. The velocity of water flowing out of the hole is	A. Independent of h B. Proportional to h^{1/2} C. Proportional to h D. Proportional to h²
103	In a surface tension experiment with a capillary tube water rises up to 0.1 m. if the same experiment is repeated on an artificial satellite, which is resolving around the earth, water will rise in the capillary tube up to a height of	A. 0.1 m B. 0.2 m C. 0.98 m D. Full length of the capillary tube
104	A body is floating in a liquid. The up thrust on the body is	A. Equal to weight of liquid displaced B. Zero C. Less than the weight of liquid displaced D. Weight of body-weight of liquid displaced
105	Pressure exerted by a gas on the walls of its container in due to	A. adhesion between the gas molecules and the container B. cohesion between the gas molecules and the container C. collision between the gas molecules and the container D. surface tension of the gas
106	The term Brownian movement refers to	A. irregular motions of small particles suspended in a fluid B. convection currents in a liquid or gas C. convection currents in a gas but not in a liquid D. the stretching of a body beyond its elastic limit
107	The density of water is $10^3 kg/m^3$. The water pressure on a submarine is $2.0 \times 10^7 N/m^2$. The depth of the submarine below the surface of the water, in maters, is approximately	A. 200 m B. 11000 m C. 2000 m D. 8000 m
108	The force exerted by the fluid in a hydraulic pump on the piston is 10 cm^2, the fluid pressure on the piston is, in N/cm^2	A. 20 B. 200 C. 2000 D. 20,000
109	A flowing liquid possess	A. K.E B. P.E C. Pressure Energy D. All
110	Bernoulli's equation is based upon law of conversation of	A. mass B. momentum C. Energy D. None
111	Surface tension of water is reduced by adding	A. Detergents B. Camphor C. Plastic D. Both A and B
112	Fire fighters have a jet attached to the head of their water pipes in order to head of their water pipes in order to	A. Increase the mass of water flowing per second B. Avoid wastage of water C. Increase the velocity of water flowing out D. Increase the volume of water flowing per second
113	Deep water almost runs still when surface water flow in rivers. What does it explains	A. Magnus effect B. Equation of continuity C. Surface energy D. Bernoulli's equation
114	Fire fighters have a jet attached to the head of their water pipes in order to head of their water pipes in order to	A. Increase the mass of water flowing per second B. Increase the velocity of water

114	Fire fighters have jet attached to the head of their water pipes in order to	flowing out C. Increase the volume of water flowing per second D. Avoid wastage of water
115	When the velocity of a liquid flowing steadily in a tube increases, its pressure?	A. Decreases B. Increases C. Remains same D. Zero
116	If water rises 4 cm in a long, thin tube because of capillary action, then, under corresponding conditions of use, the rise (in the tube) of a liquid whose density is 2 g/cm^2will be	A. 1 cm B. 2 cm C. 8 cm D. None
117	A container has a small hole in the bottom. Air can go through this hole,but water cannot. This can be best explained by the statement that	A. water contains hydrogen atoms, air does not B. water molecules are smaller than molecules in the air C. water molecules are smaller than molecules in the air D. surface tension of the water prevents it from
118	The electrical forces between the molecules of a liquid are	A. Repulsive B. Attractive C. Both A and B D. None
119	The fluid which is incompressible and non viscous is called	A. Ideal fluid B. Non-ideal fluid C. Prefect fluid D. All
120	Fluids resist force, This property is called	A. Stiffness B. Strength C. Ductility D. Elasticity
121	In case of streamed lined flow of liquid, the loss of energy is	A. Maximum B. Minimum C. Infinite D. equal to what is in turbulent flow
122	The rain drop falling from the sky reach the ground with	A. Constant terminal velocity B. Constant gravitational acceleration C. Variable acceleration D. acceleration greater than g
123	Two water pipes of diameters 4 cm and 8 cm are connected with a supply line. The velocity of flow of water in the pipe 4 cm diameter is	A. 1/4 times B. 4 times C. Twice D. 1/2 of 8 cm diameter pipe
124	If v is the velocity of flow of liquid through a tube of area of cross-section A, then according to equation of continuity	A. v/A = constant B. A/v = constant C. Av = constant D. None
125	A tube is tapered from 20 cm diameter to 2 cm diameter, the velocity at the first cross-section is 50 cm/s, then the velocity at the second cross-section is	A. 50 m/s B. 20 m/s C. 40 cm/s D. 5 cm/s
126	The property of fluids due to which they resist their own flow is called:	A. Drag force B. Surface tension C. Viscosity D. None of these
127	The resistance offered by a fluid to a solid moving inside it is called:	A. Drag force B. Surface force C. Viscosity D. None of these
128	The body passing a viscous medium affected by:	A. One force only B. Two forces only C. Four forces D. None of these
129	Machine parts are jammed due to:	A. Increasing in viscosity of lubricant B. Decreasing in viscosity of lubricant C. Decreasing in surface tension of lubricant D. None of these
130	N s $m^{-2}$is unit of:	A. Drag force B. Pressure C. Surface tension D. Coefficient of viscosity

131	A body is moving through a viscous medium eventually comes to rest because of:	A. Force of gravity B. Force of friction C. Its weight D. Both A and C
132	Glycerin has viscosity _____ the viscosity of water:	A. More than B. Equal to C. Less than D. None of these
133	Unit of viscosity is:	A. Kg m⁻¹sec⁻¹ B. N s m⁻² C. J s m⁻³ D. All of these
134	Density of fluid is defined as:	A. Its volume to mass ratio B. Product of volume and mass C. Its mass of volume ratio D. None of these
135	Fluid friction is _____ the friction between two solid surfaces:	A. Greater than B. Smaller than C. Equal to D. None of these
136	Viscosity of water is _____ that of air but ___ that of plasma.	A. More, more B. Less, more C. Less, less D. More, less
137	Stock's law holds for:	A. Motion through free space B. Motion through viscous medium C. Bodies of all shapes D. None of these
138	High speed meteors rushing through air reduces to ashes because of:	A. Force of gravity B. High resistance of air C. Drag force D. None of these
139	A massive object falls through a fluid:	A. Faster B. Slower C. Slowest D. None
140	Terminal velocity is the maximum velocity attained by a spherical droplet when the drag force_____the weight of droplet:	A. Is smaller than B. Is greater than C. Becomes equal to D. None of these
141	The _____ viscous the medium is _____, is the value of terminal velocity of the droplet:	A. More, lesser B. Lesser, more C. Both A and B D. Lesser, lesser
142	When the droplet moves with terminal velocity in a fluid, the net force acting on the droplet is:	A. F_D-mg B. Zero C. mg-F_D D. None of these
143	Two copper balls of 1 cm and 2 cm in diameter are simultaneously dropped in the same viscous medium. The terminal velocity of bigger ball is:	A. Not affected due to its size B. Twice that of small size ball C. Four times that of small size ball D. 1/4th of that of small size ball
144	At high speed, fluid friction _____ and fuel consumption ___,:	A. Increases, decreases B. Increases, increases C. Decreases, increases D. None of these
145	Fog droplets are suspended in air when their weight is balanced by:	A. Force of gravity B. Upward trust due to air C. Surface tension D. None of these
146	Drag force increases if speed of the object moving through the fluid:	A. Increases B. Decreases C. Remains constant D. None of these
147	Stoke;s law is not applicable when the speed of the object moving through a fluid is:	A. Zero B. Small C. Large D. None of these
		A. 1.0 x 10⁻²m

148	0.10 cm can be written as:	B. 1.0 x 10⁻³cm C. 1.0 x 10⁻⁴cm D. 1. x 10⁻⁴m
149	When the upward drag force of the fluid becomes equal to downward force of gravity of the droplet, then its velocity:	A. Starts increasing B. Starts decreasing C. Becomes constant D. Is called escape velocity
150	The unit of viscosity is SI system is:	A. Kg⁻¹m sec⁻¹ B. Kgm⁻¹ sec⁻¹ C. Kg⁻¹m⁻¹ sec D. None of these
151	The dimensions of viscosity are:	A. M²L⁻¹T⁻² B. M⁻¹L¹T⁻¹ C. M⁻¹L⁻¹T D. ML⁻¹T⁻¹
152	The drag force acting on a spherical droplet of radius 10^{-5}m moving with a velocity of 1 cm/sec in a fluid of velocity 5.31 x 10^{-7}m/sec. The units comes out to be:	A. 10⁻¹⁶N B. 10⁻¹⁴N C. 10⁻¹²N D. 10⁻¹⁰N
153	The study of fluid in motion basically involves law of conservation of:	A. Mass B. Energy C. Change D. Both A and C E. Both A and B
154	In a _____ flow, each particle of the fluid is called a streamline and different streamlines _____cross each other.	A. Streamline, cannot B. Turbulent, cannot C. Streamline, can D. None of these