

9th Science

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பெரிய வெற்றியடைய வாழ்த்துக்கள்.

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9th Science Lesson 1 Questions in English

1] Measurement

1. Assertion (A): Length, mass, time are Fundamental quantities

Reason (R): Quantities which cannot be expressed in terms of any other physical quantities are called fundamental quantities

- a) Both (A) and (R) are correct, but (R) does not explain (A)
- b) Both (A) and (R) are wrong
- c) Both (A) and (R) are correct and (R) explains (A)
- d) (A) is Correct and (R) is wrong

2. Which of the following statement is correct?

- 1) A unit is a standard quantity with which the unknown quantities are compared
- 2) It is defined as a specific magnitude of a physical quantity that has been adopted by law or convention.

- a) 1 alone
- b) 2 alone
- c) 1, 2
- d) None

3. When was SI system of units developed and recommended by General Conference on Weights and Measures?

- a) 1991
- b) 1960
- c) 1981
- d) 1935

4. Which of the following statement is correct?

- 1) SI system of units is the modernised and improved form of the previous system of units
- 2) There are six fundamental units in the SI system of units
- 3) It is based on a certain set of fundamental units from which derived units are obtained by proper combination

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

5. Match the following

- I. Energy - 1] N
- II. Surface tension - 2] kgms⁻¹
- III. Momentum - 3] N/m
- IV. Force - 4] Nm

- a) 1, 4, 2, 3
- b) 4, 1, 2, 3

c) 4, 3, 2, 1

d) 3, 4, 1, 2

6. Match the following

- I. Luminous intensity - 1] Mole
- II. Length - 2] Metre
- III. Amount of substance - 3] Candela
- IV. Electric current - 4] Ampere

- a) 1, 3, 2, 4
- b) 3, 1, 4, 2
- c) 2, 1, 4, 3
- d) 3, 2, 1, 4

7. Which of the following statement is correct?

- 1) Length is the extent of something between two points
- 2) The SI unit of length is metre
- 3) One metre is the distance travelled by light through vacuum in 1 second

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

8. Which of the following unit are used to measure very large distance?

- 1) Astronomical unit
- 2) Parsec
- 3) Light year

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

9. Match the following

- I. Light year - 1] 1.496×10^{11} m
- II. Parsec - 2] 3.26 light year
- III. Astronomical unit - 3] 9.46×10^{15} m

- a) 3, 1, 2
- b) 3, 2, 1
- c) 2, 1, 3
- d) 1, 3, 2

10. What is the distance from the sun of Most of the stars visible to the unaided eye in the night sky?

- a) 500 Parsec
- b) 1500 Parsec
- c) 50 Parsec
- d) 5 Parsec

11. Which of the following statement is correct?

- 1) To measure small distances such as distance between two atoms in a molecule, size of the nucleus and wavelength etc
 2) we use multiples of ten for it.
 3) These quantities are measured in Angstrom unit
 a) 1, 2
 b) 1, 3
 c) 2, 3
 d) All the above
12. Match the following
 I. Micron - 1] 10^{-15} m
 II. Nanometre - 2] 10^{-3} m
 III. Centimetre - 3] 10^{-9} m
 IV. Fermi - 4] 10^{-6} m
 a) 2, 3, 1, 4
 b) 1, 2, 4, 3
 c) 4, 3, 2, 1
 d) 3, 1, 2, 4
13. Which of the following statement is correct?
 1) Mass is the quantity of matter contained in a body
 2) One kilogram is the mass of a particular international prototype cylinder made of platinum, kept at the International Bureau of Weights and Measures at Sevres, France
 3) The SI unit of mass is kilogram
 a) 1, 2
 b) 1, 3
 c) 2, 3
 d) All the above
14. Match the following
 I. 1 g - 1] 1000 kg
 II. 1 mg - 2] 0.001 kg
 III. 1 quintal - 3] 100 kg
 IV. 1 metric tonne - 4] 0.000001 kg
 a) 1, 2, 4, 3
 b) 2, 1, 3, 4
 c) 2, 4, 3, 1
 d) 2, 1, 3, 4
15. 1 atomic mass unit is equal to _____
 a) 1/12th of the mass of C12 atom
 b) 1/12th of the mass of C11 atom
 c) 1/12th of the mass of C14 atom
 d) 1/12th of the mass of C13 atom
16. Mass of 1l of water = 1kg, Mass of 1 litre petrol= _____
 a) 10 kg
 b) Same as that of water
 c) Mass of the liquids vary with their density

- d) None
17. Which of the following statement is correct?
 1) Time is a measure of duration of events and the intervals between them.
 2) The SI unit of time is second.
 3) Larger units for measuring time are day, month, year and millennium
 a) 1, 2
 b) 1, 3
 c) 2, 3
 d) All the above
18. What is the SI unit of temperature?
 a) Joule
 b) Kelvin
 c) degree Celsius
 d) Fahrenheit
19. _____ is commonly known as absolute zero
 a) Zero degree Celsius
 b) Zero Fahrenheit
 c) Zero kelvin
 d) All the above
20. Which of the following statement is correct?
 1) Unit prefixes are the symbols placed before the symbol of a unit to specify the order of magnitude of the quantity
 2) They are useful to express very large and very small quantities
 3) A unit prefix stands for a specific positive or negative power of 10.
 a) 1, 2
 b) 1, 3
 c) 2, 3
 d) All the above
21. Match the following
 I. Peta - 1] 10^6
 II. Mega - 2] 10^2
 III. Deca - 3] 10^{15}
 IV. Hector - 4] 10^1
 a) 1, 3, 2, 4
 b) 2, 1, 3, 4
 c) 3, 1, 4, 2
 d) 1, 3, 2, 4
22. What is the mass of electron?
 a) 9.11×10^{-31} kg
 b) 2.2×10^{41} kg
 c) 2.2×10^{41} kg
 d) 9.11×10^{31} kg

23. The smallest length which can be measured by metre scale is called _____
- Least count
 - Main count
 - Least error
 - Main reading
24. What accuracy can be made using Vernier caliper?
- 0.01 mm
 - 0.01m
 - 0.1 mm
 - 0.1 cm
25. In which of the following scale of Vernier caliper is graduated?
- mm
 - cm
 - m
 - fm
- 1, 2
 - 1, 3
 - 2, 3
 - 1, 2, 4
26. How many divisions will be there in Vernier scale?
- 10
 - 20
 - 15
 - 12
27. When zero of the vernier is shifted to the left of the zero of main scale, then the error is _____
- Positive
 - Negative
 - Neutral
 - Initially a then b
28. In case of positive error, which of the following statement is correct?
- Reading is more than actual
 - Reading is less than actual
 - Reading is equal to actual
 - None
29. What is the correct reading, if the main scale reading is 8 cm, vernier coincidence is 4 and positive zero error is 0.05 cm?
- 7 cm
 - 7.99 cm
 - 8.99 cm
 - 8 cm
30. The main scale reading is 8 cm and vernier coincidence is 4 and negative zero error is 0.02 cm. Then calculate the correct reading:
- 8 cm
 - 8.6 cm
 - 8.06 cm
 - 8.00 cm
31. Which of the following can be measured using Vernier Caliper?
- Length
 - Width
 - Height
- 1, 2
 - 1, 3
 - 2, 3
 - All the above
32. Which of the following statement is correct?
- Screw gauge is an instrument that can measure the dimensions up to 1/10th of a millimetre
 - With the screw gauge it is possible to measure the diameter of a thin wire and thickness of thin metallic plates
- 1 alone
 - 2 alone
 - 1, 2
 - None
33. The head of the sleeve (Thimble) is divided into _____ divisions
- 10
 - 100
 - 1000
 - 50
34. Which of the following statement is correct?
- The screw gauge works on the principal that when a screw rotates in a nut
 - The distance moved by the tip of the screw is directly proportional to the number of rotations.
 - The pitch of the screw is the distance moved by the tip of the screw for one complete rotation of the head. It is equal to 1 mm in typical screw gauges.
- 1, 2
 - 1, 3
 - 2, 3
 - All the above
35. Match the following:
- I. Gold - 1] Tonnes
II. Medicines - 2] Gram
III. Provisions - 3] Milligram

IV. Express cargo - 4] Kg

- a) 2, 1, 3, 4
- b) 4, 1, 2, 3
- c) 2, 3, 4, 1
- d) 3, 1, 2, 4

36. The shell of an egg is ____ % of its mass

- a) 30
- b) 20
- c) 12
- d) 35

37. Which of the following is not standard reference mass of common beam-balance?

- a) 10g
- b) 20g
- c) 25g
- d) 50g

38. What are the standard reference masses used in this physical balance?

- 1) 10 mg
 - 2) 100 mg
 - 3) 1000 g
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

39. Spring balance works on the principle of ____

- a) Wuhar's law
- b) Hooke's law
- c) Newton's 3rd law
- d) Newton's 1st law

40. Which of the following statement is incorrect?

- 1) Mass (m) is the force (N) exerted by the surface on the body to balance against gravitational pull on the object

2) Weight (w) is the quantity of matter contained in a body.

3) The gravitational force acting on the object is given by 'mg'

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

41. If a man has a mass 50 kg on the earth, then what is his weight?

- a) 500 N
- b) 410 N
- c) 490 N
- d) 510 N

42. Which of the following statement is correct?

- 1) The pull of gravity on the Moon is 1/6 times weaker than that on the Earth.
- 2) The weight of the object on the Moon to be less than that on the Earth by six times
- 3) Acceleration due to gravity on the Moon = 1.63 ms^{-2}

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

43. Which of the following statement is correct?

- 1) Mass is a derived quantity
 - 2) It is measured using physical balance.
 - 3) Remains the same everywhere
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

9th Science Lesson 2 Questions in English

2] Motion

1. Choose the correct statements.

i) The change in position of an object is defined as Motion.

ii) Immovable objects are also moving due to the rotation of Earth.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

2. Which of these values are not used to describe motion?

- a) Acceleration
- b) Time
- c) Mass
- d) Speed

3. In which of this position the object has a zero velocity?

- a) Rest
- b) Motion
- c) Swing
- d) Linear

4. Assertion (A): Motion is a relative phenomenon with respect to the viewer.

Reasoning(R): Trees would appear to move backwards for a person travelling in the train.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True and R is False.
- d) Both A and R is False.

5. Identify the Incorrect Match

- A. Oscillatory Motion i) Single to and fro movement
- B. Linear Motion ii) Along a straight line
- C. Circular Motion iii) Along a circular path

- a) i only
- b) ii only
- c) iii only
- d) None of the above

6. Which of this motion is depicted in bird fly?

- a) Oscillatory Motion
- b) Random Motion
- c) Linear Motion
- d) Circular Motion

7. What is the type of motion for a flight covering a distance of 300km every one hour?

- a) Uniform Motion
- b) Accelerated Motion
- c) Non-Uniform Motion
- d) Non- Linear Motion

8. Assertion (A): Uniform Motion of an object is defined as covering equal distance in equal interval of time.

Reasoning(R): The Time interval for a uniform motion must be equal to the distance covered.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True and R is False.
- d) Both A and R is False.

9. Which of this example denotes a Non-uniform motion?

- a) Movement of fan
- b) An object thrown into air
- c) Earth moving round the sun
- d) A vibrating spring in a sewing machine

10. Define a non-uniform motion?

- a) Equal distances in equal intervals of time
- b) Unequal distances in equal intervals of time
- c) Equal distances in unequal intervals of time
- d) Unequal distances in unequal intervals of time

11. What is the length of the line AB in the given picture?

- a) Displacement
- b) Speed
- c) Acceleration
- d) Velocity

12. Which of these denotes the total length of the path travelled by an object?

- a) Force
- b) Momentum
- c) Distance
- d) Velocity

13. Choose the correct statements regarding Distance.

- i) The actual length of the path travelled by moving body.
- ii) The measurement is meter in the SI system.
- iii) It is a scalar quantity.

- a) i only
- b) ii only

c) iii only

d) All the above

14. Assertion (A): The change in position of a moving body in a particular direction is defined as Displacement.

Reasoning (R): The Displacement is a vector quantity measured in terms of meter in SI system.

a) Both A and R is True and R is the correct explanation of A.

b) Both A and R is True but R is not the correct explanation of A.

c) A is True and R is False.

d) Both A and R is False.

15. Choose the correct statements.

a) Speed shows how fast an object is moving.

b) Velocity is measured in meter.

c) Speed is a vector quantity.

d) Velocity measures the direction of a moving object.

16. Which of these quantity measures the rate of change of distance travelled by an object in unit time?

a) Displacement

b) Acceleration

c) Speed

d) Velocity

17. How long would it take to travel a distance of 70 miles if a person is travelling at 30 miles per hour?

a) 2 hours 20 minutes

b) 2 hours 20 seconds

c) 1 hour 50 minutes

d) 1 hour 20 minutes

18. What is the SI unit of speed?

a) ms^{-1}

b) ms^{-1}

c) ms^{-2}

d) ms^2

19. What is the average speed of an object moving 50 m in 30 s, 30 m in next 20 s and 20 m in another 15 s?

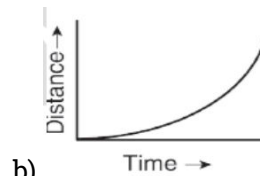
a) 1.54 ms^{-1}

b) 15.4 ms^{-1}

c) 1.54 ms^{-2}

d) 154 ms^{-1}

20. Which of this graph denotes the Uniform accelerated motion of an object?



d)

21. Choose the correct statements regarding Velocity.

i) Velocity is the rate of change of displacement.

ii) It is a scalar quantity.

a) i only

b) ii only

c) Both i and ii

d) Neither i nor ii

22. Which of these quantities have a SI unit of ms^{-1} ?

a) Velocity

b) Acceleration

c) Displacement

d) Speed

23. What is the formula to calculate the velocity of an object in a particular direction?

a) Speed / Time

b) Distance / Direction

c) Displacement / Time

d) Speed / Displacement

24. Which of these are not true regarding the concept of Acceleration?

a) Rate of change of speed

b) Rate of change of velocity

c) Vector quantity

d) SI unit is ms^{-2}

25. Define acceleration in terms of velocity and time.

a) Change in velocity * Time

b) Time / Final velocity

c) Change in velocity / Time

d) Final velocity - Initial velocity

26. The value of acceleration is positive for a moving object if,

- i) Moving object reverses its direction with time.
- ii) Initial velocity is greater than Final velocity.
- iii) Velocity value increases with time.

- a) i only
- b) ii only
- c) iii only
- d) All the above

27. State the condition for the negative acceleration for a moving object?

- a) Initial velocity is less than final velocity.
- b) Final velocity is less than initial velocity.
- c) Both velocities are negative.
- d) None of the above

28. What are the other names of negative acceleration?

- a) Retardation
- b) Deceleration
- c) Acceleration
- d) Both a and b

29. Choose the Incorrect statements regarding the Uniform motion distance-time graph.

- i) It is a straight line graph.
 - ii) Velocity is obtained from the slope of the line.
 - iii) Steeper the slope speed is increased.
- a) i only
 - b) ii only
 - c) iii only
 - d) None of the above

30. Which of this quantity is changed by the change in the slope of the line for a uniform motion in the Distance- Time graph?

- a) Velocity
- b) Acceleration
- c) Speed
- d) None of the above

31. The distance and time varies ____ for a non-uniform motion.

- a) Linearly
- b) Elliptically
- c) Non-Linear
- d) Tangentially

32. In which of these conditions the velocity-time graph will have a straight line?

- a) Increased speed
- b) Uniform velocity

c) Uniform Motion

d) Steeper slope

33. Which of this quantity is inferred by the shaded portion of the velocity- time graph?

- a) Velocity variation
- b) Acceleration
- c) Speed
- d) Displacement

34. A velocity-time graph of an object shows,

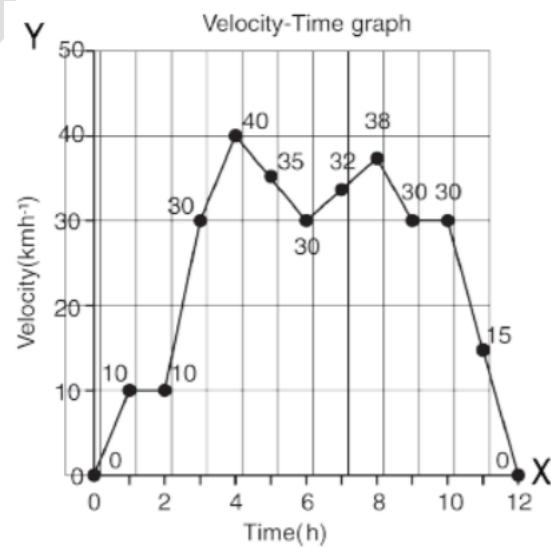
- i) Changes in velocity in equal interval of time.
- ii) Displacement or the distance covered by an object.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

35. Which of these quantity changes the velocity in the velocity- time graph?

- a) Acceleration
- b) Speed
- c) Distance
- d) All the above

36. Which of these motion is described from the below velocity- time graph?



- a) Uniform motion
- b) Non-uniform motion
- c) Circular motion
- d) Non- circular motion

37. Which of this value is measured by a speedometer in an automobile?

- a) Maximum Speed
- b) Instantaneous Speed
- c) Acceleration
- d) Minimum Speed

38. Choose the correct statements.

- i) The average velocity is equal to the instantaneous velocity for a uniformly moving object.
- ii) Instantaneous velocity is also called as instantaneous speed or velocity.
- a) i only
b) ii only
c) Both i and ii
d) Neither i nor ii
39. Which of these quantities are discussed by Newton's equation for moving objects?
a) Velocity
b) Acceleration
c) Time
d) All the above
40. Which of this equation does not related to Newton's study?
a) $v = u + at$
b) $v - u = at^2$
c) $s = ut + \frac{1}{2}at^2$
d) $v^2 = u^2 + 2as$
41. Which of these quantities are related by the first equation of motion?
a) Initial velocity, Final velocity, Time
b) Time, Acceleration, Distance
c) Displacement, Speed, Time
d) Initial velocity, Final velocity, Acceleration, Time
42. A Trolley slides down an inclined plane at an acceleration of 2 m s^{-2} after 3s find the velocity of the trolley?
a) 4 m/s^2
b) 6 m/s
c) 60 m/s^2
d) 0.6 m/s
43. Which of this quantity is derived from the Newton's second equation of motion?
a) Speed
b) Distance
c) Average velocity
d) Maximum Acceleration
44. State the newton's third equation motion.
a) $v^2 + u^2 = 2as$
b) $v = gt$
c) $v^2 = u^2 + 2as$
d) $u + v = as$
45. Which of this value is replaced by the gravity value g for a free falling body?
a) u
b) a
c) v
d) h
46. If an object thrown vertically upwards in space,
a) The highest point has zero velocity.
b) Max velocity at the lowest point
c) Minimum acceleration due to gravity.
d) Maximum velocity at highest point.
47. What is the value of acceleration when the object falls from space towards earth?
a) $a = 0$
b) $a = -g$
c) $a = +g$
d) $a = \infty$
48. Which is not a characteristic of a Uniform Circular motion?
a) Objects move in a circular path
b) Velocity and direction of movement are equal.
c) Variation in speed.
d) No tangential acceleration
49. What changes the velocity of an object in a circular path of accelerated motion?
a) Constant motion
b) Change in speed
c) Change in direction
d) Constant speed
50. Which of these are not examples of accelerated motion?
a) Revolution of the earth around sun
b) Rotation of earth on its own axis
c) Second hand movement of a clock
d) Revolution of moon around the earth
51. What is the value of speed of an object with circular path radius r and time T?
a) $(2 * r) / T$
b) $\pi * r * T$
c) $(2 * \pi * r) / T$
d) $T / (2 * \pi * r)$
52. Assertion (A): Motion of an object with constant speed and continuous change of direction in circular path is an accelerated motion.
Reasoning(R): An object is accelerated if the velocity changes in magnitude and direction.
a) Both A and R is True and R is the correct explanation of A.
b) Both A and R is True but R is not the correct explanation of A.
c) A is True and R is False.
d) Both A and R is False.

53. Choose the correct statements.

i) The acceleration acting along the string of an object moving in a circular path is Centripetal Acceleration.

ii) The centripetal acceleration is directed towards the center of the circular path.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

54. Find the velocity of an object along a circular path of radius r and centripetal acceleration a ?

- a) $v = 2a / r$
- b) $v = ar / 2$
- c) $v = 4r / 2$
- d) $v = ar * 2$

55. What is the magnitude value of the Centripetal force?

- a) $m v / 2 r$
- b) mv^2 / r
- c) $2 mv / r$
- d) $r m / 2 v$

56. Find the mass of an object with acceleration 5ms^{-2} and the net force acting is 250N.

- a) 50
- b) 10
- c) 0.5
- d) 500

57. Which of these forces could not act as a centripetal force?

- a) Gravitational Force
- b) Frictional Force
- c) Electrostatic Force
- d) Centrifugal Force

58. Assertion (A): Force acting away from the center of the circular path is called as Centrifugal force.

Reasoning(R): The direction of centrifugal and centripetal force is always same.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True and R is False.
- d) Both A and R is False.

59. Which of this force is applied in the dryer mechanism of a washing machine?

- a) Centrifugal Force
- b) Gravitational Force
- c) Centripetal Force
- d) Frictional Force

60. Which of these is not classified as a motion type?

- a) Circular
- b) Trapezoidal
- c) Oscillatory
- d) Random

9th Science Lesson 3 Questions in English

3] Fluids

1. A small iron nail sinks in water, whereas a huge ship of heavy mass floats on sea water. Astronauts have to wear a special suit while traveling in space. All these have a common Reason called _____
- Density
 - Pressure
 - Friction
 - Heat
2. Which among the following statement is correct
- If the pressure increases in a liquid, based on its inherent properties, it experiences tension and ultimately deforms or breaks. In the case of gases, it causes them to flow rather than to deform.
 - Although liquids and gases share some common characteristics, they have many distinctive characteristics on their own. It is easy to compress a gas whereas liquids are incompressible. Learning of all these facts helps us to understand pressure better.
- Only 1
 - Only 2
 - Both 1 and 2
 - None
3. Which among the following statement is correct
- When you stand on loose sand, the force is acting on an area equal to the area of your feet. When you lie down, the same force acts on an area of your whole body, which is larger than the area of your feet. Thus, the force acting parallel to the surface is called thrust.
 - Therefore, the effect of thrust, depends on the area on which it acts. The effect of thrust on sand is larger while standing than while lying.
- Only 1
 - Only 2
 - Both 1 and 2
 - None
4. Which among the following equation defines pressure
- Areas of contact / Thrust
 - Area of contact / Weight of Particle
 - Thrust / Area of contact
 - Friction / Area of contact
5. In SI units, the unit of thrust is _____
- Newton
 - Pascal
 - Watt
 - Joule
6. Which among the following is the unit of Pressure?
- $\text{N}^{-2}\text{m}^{-1}$
 - Nm^{-1}
 - N^{-2}m
 - Nm^{-2}
7. In the honour of the great French scientist, $1 \text{ Nm}^{-2} = \text{what?}$
- $1 \text{ Nm}^{-2} = 1 \text{ W}$
 - $1 \text{ Nm}^{-2} = 1 \text{ pa}$
 - $1 \text{ Nm}^{-2} = 1 \text{ Joule}$
 - $1 \text{ Nm}^{-2} = 1 \text{ Farad}$
8. Which among the following is called as fluids?
- Solid
 - Liquid
 - Gases
 - Both liquid and gases
9. Which among the following equation calculate pressure in fluid?
- F/A
 - Pa/A
 - N/A
 - A/Pa
10. The force exerted due to the pressure of a liquid on a body submerged in it and on the walls of the container is always what to the surface?
- Parallel
 - Semi parallel
 - Perpendicular
 - Both parallel and perpendicular
11. Pressure exerted by a liquid at a point is determined by what?
- Depth
 - Density of the liquid
 - Acceleration due to gravity
 - All the above
12. A man whose mass is 90 kg stands on his feet on a floor. The total area of contact of his two feet with the floor is 0.036 m^2 (Take, $g = 10 \text{ ms}^{-2}$). How much is the pressure exerted by him on the floor?
- 15000 N
 - 15000 Pa
 - 25000 N
 - 25000 Pa

13. A tall beaker is filled with liquid so that it forms a liquid column. The area of cross section at the bottom is A. The density of the liquid is ρ . The height of the liquid column is h. In other words, the depth of the water from the top-level surface is 'h'. what is pressure due to liquid column?

- a) $P = h\rho Ag$
- b) $P = h\rho g$
- c) $P = hA / \rho g$
- d) $P = 1 / h\rho g$

14. Earth is surrounded by a layer of air up to certain height (nearly 300 km) and this layer of air around the earth is called _____

- a) Crust
- b) Galaxy
- c) Atmosphere
- d) Debris

15. Which among the following statement is true

- a) Air gets thinner with decrease in altitude
- b) Air gets heavier as we go above the sea level
- c) Air gets thinner with increase in altitude
- d) All the above

16. The atmospheric pressure we normally refer is _____

- a) The air pressure at stratospheric level
- b) The air pressure at ground level
- c) The air pressure at sea level
- d) The air pressure at mountain level

17. What is the pressure of sea level at which human lung is adapted to breath?

- a) 93.7 K Pa
- b) 101.3 K Pa
- c) 104.8K Pa
- d) 98.2K Pa

18. The instrument used to measure atmospheric pressure is called _____

- a) Anemometer
- b) Tachometer
- c) Galvanometer
- d) Barometer

19. A mercury barometer, first designed by which Italian physicist?

- a) Pascal
- b) Galileo
- c) Enrico Fermi
- d) Torricelli

20. Which among the following statement is correct

- 1) The barometer works by balancing the mercury in the glass tube against the outside air pressure. If the

air pressure increases, it pushes more of the mercury up into the tub and if the air pressure decreases, more of the mercury drains from the tube.

2) As there is no air trapped in the space between mercury and the closed end, there is vacuum in that space. Vacuum cannot exert any pressure. So, the level of mercury in the tube provides a precise measure of air pressure which is called atmospheric pressure. This type of instrument can be used in a lab or weather station.

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) None

21. On a typical day at sea level, the height of the mercury column is _____

- a) 720 mm
- b) 760 mm
- c) 780 mm
- d) 820 mm

22. Let us calculate the pressure due to the mercury column of 760 mm which is equal to the atmospheric pressure. The density of mercury is 13600 kg m^{-3} ?

- a) $P = 2.134 \times 10^5 \text{ Pa}$
- b) $P = 1.013 \times 10^5 \text{ Pa}$
- c) $P = 0.714 \times 10^5 \text{ Pa}$
- d) $P = 3.182 \times 10^5 \text{ Pa}$

23. What is the other unit of one atmospheric pressure?

- a) Joule
- b) Watt
- c) Bar
- d) Farad

24. Calculate the pressure exerted by a column of water of height 0.85 m (density of water, $\rho_w = 1000 \text{ kg m}^{-3}$) and kerosene of same height (density of kerosene, $\rho_k = 800 \text{ kg m}^{-3}$)

- a) Pressure due to water = 8500 Pa and pressure due to kerosene = 6800 Pa
- b) Pressure due to water = 7200 Pa and pressure due to kerosene = 6800 Pa
- c) Pressure due to water = 8500 Pa and pressure due to kerosene = 5600 Pa
- d) Pressure due to water = 7200 Pa and pressure due to kerosene = 5600 Pa

25. For pressures higher than atmospheric pressure, absolute pressure = ?

- a) Atmospheric pressure – Gauge pressure
- b) Gauge pressure – Atmospheric pressure

- c) Atmospheric Pressure + Gauge Pressure
d) Gauge pressure / Atmospheric pressure
26. In petrol bunks, the tyre pressure of vehicles is measured in a unit called ____
- a) Pa
b) Psi
c) Pv
d) Pnm
27. which among the following Law is the basis for the Hydraulic pressure?
- a) Pascal's Law
b) Hooke's Law
c) Graham's Law
d) Kepler's Law
28. Pascal's law states that the external pressure applied on an incompressible liquid is transmitted how?
- a) Transmitted perpendicular to the liquid surface
b) Transmitted parallel to the liquid surface
c) Transmitted along the edges of liquid
d) Transmitted equally throughout the liquid
29. In Hydraulic press, the force F2 that acts on the larger piston is greater than the force F1 acting on the smaller piston. Hydraulic systems working in this way are known as ____
- a) Flow force
b) Force dynamic
c) Force multipliers
d) Force extensions
30. A hydraulic system is used to lift a 2000 kg vehicle in an auto garage. If the vehicle sits on a piston of area 0.5 m², and a force is applied to a piston of area 0.03 m², what is the minimum force that must be applied to lift the vehicle?
- a) F2 = 1038 N
b) F2 = 1176 N
c) F2 = 1236 N
d) F2 = 1383 N
31. Which among the following is the mass per unit volume of a given substance?
- a) The surface tension of a substance
b) The force of a substance
c) The Temperature of a substance
d) The density of a substance
32. The SI unit of density is ____
- a) N / m²
b) Kgm³
c) Kg / m³
d) Nm²
33. The symbol for density is ____
- a) ρ
b) J
c) w
d) c
34. At what temperature density of the water is 1g/cm³?
- a) 2° C
b) 4° C
c) 8° C
d) 10° C
35. Density of any other substance with respect to the density of water at 4 °C is called ____
- a) Absolute density
b) Co-Operative density
c) Relative density
d) All the above
36. Which among the following equation defines Density?
- a) Mass / Volume
b) Volume / Mass
c) Mass / Temperature
d) Temperature / Mass
37. Which among the following is used to measure relative density?
- a) Lactometer
b) Pycnometer
c) Barometer
d) Hydrometer
38. You have a block of a mystery material, 12 cm long, 11 cm wide and 3.5 cm thick. Its mass is 1155 grams. What is its density?
- a) Density = 0.3 g cm⁻³
b) Density = 1.8 g cm⁻³
c) Density = 2.5 g cm⁻³
d) Density = 3.2 g cm⁻³
39. A direct-reading instrument used for measuring the density or relative density of the liquid is called ____
- a) Hydrometer
b) Pycnometer
c) Barometer
d) Saccharometer
40. Which among the following is incorrect about Hydrometer?
- 1) Hydrometer consists of a cylindrical stem having a spherical bulb at its lower end and a narrow tube at its upper end. The lower spherical bulb is partially filled with lead shots or mercury. This helps

hydrometer to float or stand vertically in liquids. The narrow tube has markings so that relative density of a liquid can be read directly.

2) The liquid to be tested is poured into the glass jar. The hydrometer is gently lowered in to the liquid until it floats freely. The reading against the level of liquid touching the tube gives the relative density of the liquid.

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) None

41. Which among the following instrument is used for measuring the density of sugar in a liquid?

- a) Barometer
- b) Lactometer
- c) Saccharometer
- d) Tachometer

42. Which among the following instrument is used to check the purity of milk?

- a) Tachometer
- b) Lactometer
- c) Alcoholometer
- d) Barometer

43. The lactometer consists of a long-graduated test tube with a cylindrical bulb with the graduation ranging from what to what?

- a) 15 at top to 45 at bottom
- b) 20 at top to 50 at bottom
- c) 45 at top to 15 at bottom
- d) 50 at top to 20 at bottom

44. The correct lactometer reading is obtained only at the temperature of what?

- a) 93° F
- b) 82° F
- c) 70° F
- d) 60° F

45. Where the pressure is more in Liquid?

- a) Top
- b) Bottom
- c) Centre
- d) Uniformly distributed

46. The pressure difference causes a force on the object and pushes it upward. This force is called

-
- a) Inertia force
 - b) Joule force
 - c) Buoyant force
 - d) Magnitude force

47. Which among the following factor is known as positively buoyant?

- a) If the object weighs more than the amount of water it has displaced
- b) If the object weighs less than the amount of water it has displaced
- c) If the object weighs equal to the amount of water it has displaced
- d) None of the above

48. Which among the following is an experiment that demonstrates the principle of buoyancy?

- a) Galileo's experiment
- b) Millikan's driver
- c) Eratosthenes driver
- d) Cartesian driver

49. Archimedes principle is the consequence of what?

- a) Newton law
- b) Joules law
- c) Pascal law
- d) Schrodinger law

50. When a body is partially or completely immersed in a fluid at rest, it experiences what?

- a) Upthrust which is equal to the weight of the fluid displaced by it
- b) Upthrust which is less to the weight of the fluid displaced by it
- c) Upthrust which is more to the weight of the fluid displaced by it
- d) Down thrust which is equal to the weight of the fluid displaced by it

51. Which among the following equation gives apparent weight of an object in Archimedes principle?

- a) True weight of an object in air – Upthrust
- b) Upthrust – True weight of an object in air
- c) True weight of an object in air + Upthrust
- d) True weight of an object in air / Upthrust

52. Which among the following statement is incorrect regarding law of floatation?

- 1) The weight of a floating body in a fluid is equal to the weight of the fluid displaced by the body.
- 2) The centre of gravity of the floating body and the centre of buoyancy are in the same horizontal line.

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) None

53. Which among the following statement is correct

1) Salt water provides more buoyant force than fresh water, because, buoyant force depends as much on the density of fluids as on the volume displaced.

2) Flotation therapy uses water that contains Epsom salts rich in sodium. As a floater relaxes, he or she is absorbing this sodium through the skin.

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) None

54. A mercury barometer in a physics laboratory shows a 732 mm vertical column of mercury. Calculate the atmospheric pressure in pascal. [Given density of mercury, $\rho = 1.36 \times 10^4 \text{ kg m}^{-3}$, $g = 9.8 \text{ m s}^{-2}$]

- a) $P = 7.63 \times 10^4 \text{ Pa}$
- b) $P = 8.19 \times 10^4 \text{ Pa}$
- c) $P = 9.76 \times 10^4 \text{ Pa}$
- d) $P = 6.82 \times 10^4 \text{ Pa}$

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Answer Key

1. Measurement																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	C	B	B	C	D	A	D	B	A	B	C	B	C	A	C	D	B	C	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	A	A	C	A	A	B	A	B	C	D	B	B	D	C	C	C	A	B	A
41	42	43																	
C	D	C																	
2. Motion																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	C	A	A	A	B	A	C	B	B	A	C	D	A	A	C	A	B	A	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	A	C	A	C	C	B	D	B	C	C	B	D	C	A	B	B	C	D	B
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
D	B	B	C	B	A	C	C	C	B	C	A	C	B	B	A	D	C	A	B
3. Fluids																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	B	B	C	A	D	B	D	A	C	D	D	B	C	C	C	B	D	D	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	B	C	A	C	B	A	D	C	B	D	C	A	B	C	A	B	C	A	C
41	42	43	44	45	46	47	48	49	50	51	52	53	54						
C	B	A	D	B	C	B	D	C	A	A	B	A	C						
4. Electric Charge and Electric Current																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	C	C	B	B	B	A	C	C	D	B	C	C	C	A	B	A	B	B	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	B	B	A	A	D	C	C	D	D	D	D	B	B	A	B	D	D	D	B
41	42	43	44	45															
C	A	D	B	A															
5. Magnetism and Electromagnetism																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	C	C	D	A	D	B	D	C	A	C	B	C	B	B	C	A	A	D	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	B	B	C	B	D	C	D	B	C	A	A	C	C	B	C	D	A	A	C
41	42	43	44	45	46	47	48	49	50	51	52								
B	B	C	B	D	A	C	A	D	B	D	A								
6. Light																			

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	B	B	B	D	B	A	B	D	A	B	C	B	D	D	C	D	A	C	A
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	C	C	B	A	C	C	D	B	D	C	C	C	D	B	D	B	D	D	C

7. Heat

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	B	A	A	C	A	A	B	B	C	C	B	D	B	C	A	C	A	A	A
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	C	C	A	D	C	D	A	B	B	A	A	A	B	A	A	C	A	C	B
41	42	43	44	45	46	47	48												
B	D	B	A	D	D	A	A												

8. Sound

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	D	B	B	C	A	A	D	B	B	C	B	A	B	A	C	A	B	D	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	A	B	B	B	A	C	B	D	D	A	C	B	A	B	C	D	B	B	B
41	42	43	44	45	46	47	48	49	50	51	52								
C	B	A	C	B	C	D	A	B	C	B	C								

9. Universe

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	C	C	D	A	B	C	B	D	B	C	B	A	B	C	D	B	A	D	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	B	B	A	A	A	C	B	C	B	D	A	C	B	B	A	C	D	B	B
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
C	A	C	B	A	C	D	B	B	A	D	C	A	B	B	A	C	B	D	C
61	62	63	64	65	66	67	68												
A	C	D	A	C	B	C	B												

10. Matter Around Us

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	A	A	C	B	C	C	A	D	A	C	C	D	B	C	A	C	B	D	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	B	C	C	D	C	D	A	A	B	C	C	B	B	D	B	C	A	D	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56				
C	A	B	A	B	D	B	D	C	B	C	A	A	C	A	D				

11. Atomic Structure

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	D	B	B	C	C	D	A	D	D	C	A	C	A	B	D	B	B	A	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

B	B	C	C	B	B	B	D	A	C	A	C	D	D	D	C	B	D	D	A
41	42	43																	
C	B	C																	

12. Periodic Classification of Elements

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	A	C	B	C	C	A	C	C	B	D	B	B	B	D	B	B	D	C	A
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	B	C	C	B	B	B	B	B	D	B	D	B	D	C	D	B	B	C	B

13. Chemical Bonding

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	D	B	B	A	C	B	D	A	C	A	B	C	C	B	B	D	A	A	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	B	B	A	D	B	B	D	A	C	C	B	C	B	D	C	C	C	B	A
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57			
B	D	B	B	D	A	C	B	C	C	B	D	D	B	B	B	C			

14. Acids, Bases and Salts

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	C	A	C	B	A	C	D	C	C	B	A	B	A	D	C	A	A	B	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	B	C	A	D	B	C	B	D	A	B	A	C	D	A	B	D	C	A	A
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
D	B	B	A	B	C	D	C	A	B	A	D	B	C	A	C	A	A	C	A
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
C	A	A	A	B	D	C	A	C	C	D	A	D	A	C	D	B	A	C	A

15. Carbon and Its Compounds

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	C	A	D	A	D	C	D	B	D	A	C	B	B	C	A	C	D	A	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	A	C	C	B	C	D	B	B	A	D	B	D	B	C	D	A	C	B	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A	A	C	B	D	A	C	A	C	C	B	A	D	C	C	B	A	B	C	D
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
C	A	A	C	D	D	A	B	A	B	B	B	A	C	B	D	B	A	A	D
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	
C	B	C	B	B	A	C	B	A	D	A	C	D	A	C	B	D	A	D	

16. Applied Chemistry

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	C	B	C	A	B	C	D	D	A	B	A	D	C	B	A	C	A	D	B

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	C	B	A	A	C	C	B	A	B	D	A	D	C	B	D	D	B	A	B
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	A	A	B	D	D	B	A	A	A	C	D	B	D	A	B	A	A	C	A
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
B	B	B	A	A	C	B	D	B	C	B	C	C	D	A	B	D	A	A	C
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
A	C	A	C	C	B	C	B	C	A	D	D	D	C	D	B	A	C	D	B
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
B	C	D	D	B	C	D	A	B	D	B	D	D	B	A	B	A	C	B	D
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
C	C	C	B	A	C	A	B	C	D	B	D	C	A	D	A	B	A	C	D

17. Animal Kingdom

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	C	B	B	D	D	D	B	B	D	C	C	D	C	C	D	D	B	A	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	B	C	A	C	B	B	D	A	C	D	A	C	D	D	D	C	D	D	A
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57			
D	D	A	C	A	B	C	D	D	B	B	B	B	D	D	C	B			

18. Organization of Tissues

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	C	C	B	A	D	A	B	B	B	D	D	C	C	D	D	B	C	C	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	C	A	D	D	B	C	A	C	D	D	C	A	B	A	C	B	C	C	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
C	C	D	D	C	C	B	A	D	C	B	D	C	D	D	C	C	C	A	D
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
C	D	A	B	B	B	D	D	C	C	A	D	B	B	D	B	B	D	A	A
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
B	D	D	A	B	D	D	C	D	C	B	D	B	C	D	A	D	B	C	C
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A	A	B	B	B	C	B	A	B	A	B	C	B	A	A	B	A	C	B	C
121																			
D																			

19. Plant Physiology

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	D	B	C	D	C	B	C	C	B	B	A	C	D	B	B	C	D	D	B
21	22	23	24	25	26	27	28	29	30	31									

D	D	B	C	C	D	A	C	A	A	C									
20. Organ Systems in Animals																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	B	D	D	D	B	D	A	D	C	D	C	B	D	A	C	D	A	B	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	A	D	B	B	B	A	C	A	B	B	A	C	B	C	B	C	D	C	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	A	A	D	C	B	B	A	B	A	A	C	A	B	B	C	C	B	D	C
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
B	A	A	C	D	C	C	A	B	D	B	C	C	C	B	B	A	B	D	C
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
C	B	D	C	B	D	A	D	B	C	C	C	C	A	A	B	D	B	B	C
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118		
A	A	C	C	A	A	B	C	C	D	C	D	D	C	B	C	A	D		
21. Nutrition and Health																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	D	C	D	A	D	B	C	D	B	C	A	B	A	D	C	D	A	A	A
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
C	C	C	B	D	D	B	D	B	A	D	B	D	B	D	D	C	A	D	C
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	D	A	C	C	C	D	D	D	C	C	B	A	D	D	A	A	B	D	A
61	62	63																	
D	D	A																	
22. World of Microbes																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	B	C	A	D	A	D	B	A	C	A	C	B	A	A	B	C	A	C	B
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	B	B	A	C	D	A	D	B	C	A	C	D	B	A	A	B	D	C	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	C	D	A	C	B	A	B	A	D	B	D	A	C	C	C	B	C	C	B
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
C	D	A	A	C	D	B	A	C	B	D	B	D	C	A	C	B	C	A	C
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
B	A	D	A	C	A	C	A	A	C	C	A	B	B	D	C	A	C	B	D
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
D	B	A	D	A	C	B	D	B	D	C	B	D	D	A	D	C	B	C	C
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135					
A	D	B	A	B	A	C	A	B	A	A	C	A	D	A					

23. Economic Biology																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	B	A	A	B	C	D	A	B	D	B	A	D	C	B	A	B	A	D	A
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	C	A	D	A	D	D	D	A	D	D	B	A	A	D	D	C	D	B	C
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	A	C	D	D	A	B	C	C	A	C	A	C	D	D	C	A	D	B	D
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
A	B	A	B	C	D	A	B	D	A	C	A	C	D	C	B	D	B	D	C
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
A	B	A	D	D	A	C	B	D	C	D	A	A	A	C	B	B	C	C	D
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
B	C	A	D	C	A	D	D	A	A	A	C	C	A	D	D	D	B	C	A
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135					
A	B	D	B	A	A	B	A	D	A	C	B	D	A	D					
24. Environmental Science																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	B	C	D	C	C	C	C	C	D	B	C	D	B	B	C	D	D	D	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	D	A	C	B	D	C	D	A	C	D	C	D	D	D	D	D	B	A	B
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A	B	B	C	B	D	C	B	A	C	A	A	C	D	B	B	C	B	B	D
61	62	63	64	65	66	67	68	69	70	71									
A	D	D	D	A	A	A	B	A	B	B									