PAST

Parishram Admission cum Scholarship Test
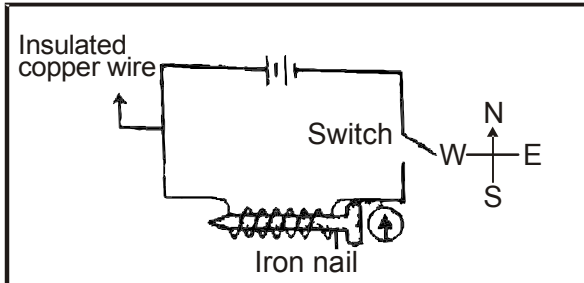
SAMPLE QUESTIONS

Parishram

SAMPLE QUESTIONS FOR VII TO VIII MOVING

PHYSICS

1. Observe the figure given below.

What will you observe in the compass shown in the above figure when the circuit is switched on?
(A) It points towards east.
(B) It points towards west.
(C) It points towards north.
(D) It points towards south.

2. Ram goes from Muzaffarpur to Patna in 5 Hours and returns in 3 Hours. Find the average velocity of Ram. [Distance Between Muzaffarpur to Patna is 100 km]
(A) 12.5 km/hr.   (B) 25 km/hr.
(C) 50 km/hr.   (D) 0 km/hr.

3. What happens to the image magnification if the object is placed at centre of curvature of concave mirror
(A) 1   (B) 2
(C) >2   (D) > 2.5

4. Observe the circuit shown below:
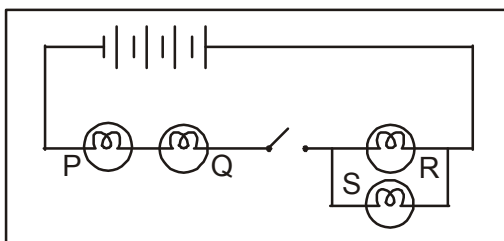
Identify the bulbs that glow when switch is in the 'OFF' position?
(A) P and Q only
(B) Only S
(C) R and S only
(D) None of the bulbs glow

5. A horse runs a distance of 1200 m in 2 minutes. What is its speed?
(A) 6 m/s   (B) 10 m/s
(C) 24 m/s   (D) 600 m/s

6. Why do we observe the Phenomenon of lateral inversion in a mirror
(A) rectilinear propagation of light
(B) curvilinear motion of light
(C) refraction of light
(D) wave nature of light

7. When the switch is ON,
(A) all electrons of conductor starts flowing
(B) free electrons of conductor starts flowing
(C) protons of conductor starts flowing
(D) atoms of conductor starts flowing

8. The following is the figure of an igloo in which eskimos live.
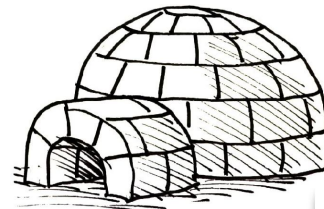
Which of the following acts as am insulator in an igloo?
(A) Ice – Water   (B) Snow – Water
(C) Air – Snow   (D) Air – Water

9. Rainbow formation is an example of
(A) Scattering   (B) dispersion
(C) reflection   (D) diffusion.

10. A body of density D is broken into two parts now, the new density for substance will be
(A) D   (B) 2D
(C) D/2   (D) None of these.

11. Which element has highest density
(A) water   (B) mercury
(C) ethanol   (D) methanol.

12. Composition of air can be best represented by drawing
(A) pie-chart   (B) bar graph
(C) histogram   (D) line graph

13. If the slope of V-I graph is constant at 1, it means
(A) Voltage is constant
(B) Current is constant
(C) Resistance is constant
(D) None of these

14. The regular vibration of which of the following electrically driven crystal are used for measuring time.
(A) calcite crystal
(B) quadric crystal
(C) chrome crystal
(D) quartz crystal

15. MCB stands for
(A) Multi Circuit Breaker
(B) Magnetic Circuit Breaker
(C) Miniature Circuit Breaker
(D) Magnetic Current Binder.

16. Newton's disc is associated with
(A) diffraction   (B) dispersion
(C) interference   (D) refraction

17. $86^\circ F$ is equivalent to
(A) $25^\circ C$ (B) $30^\circ C$
(C) $35^\circ C$ (D) $40^\circ C$.

18. Simple Harmonic Motion is an example of
(A) Periodic oscillatory
(B) Non-Periodic Oscillatory
(C) Periodic Non-oscillatory
(D) Non-Periodic Non-oscillatory.

19. Which of the following can form a real and inverted image when objects are placed in front of them?
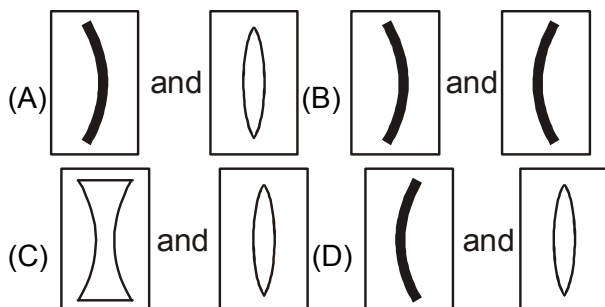
20. Which of the given graphs represents constant speed of an object?
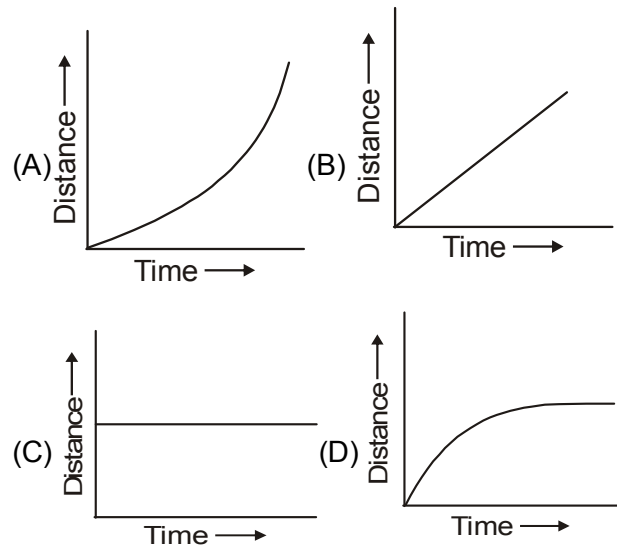
21. Study the given figure.
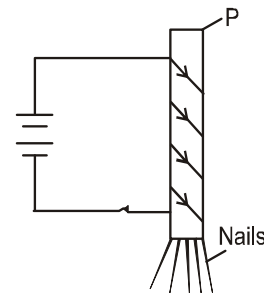
A coil is wound around a core 'P'. When the switch is closed, nails are atteracted to P as shown in figure. On opening the switch, all the nails get detached. Which material could 'P' be?
(A) Steel   (B) Plastic
(C) Soft iron   (D) Both (A) and (B)

22. A man walks 3m North, then tuns right and move 4m. Find the shortest distance between the inital & final position
(A) 3.5 m   (B) 4.5 m
(C) 5 m   (D) 7 m.

23. At what temp, both celsius and farenheit scale gives same reading.
(A) $-20^\circ C$ (B) $20^\circ C$
(C) $-30^\circ C$ (D) $-40^\circ C$

24. In a band of seven colours i.e., the component of white light, the colour that appears between orange and green is
(A) Yellow   (B) Red
(C) Indigo   (D) Blue.

25. Speed of sound in air at 0^0C is.
(A) 390 m/s   (B) 360 m/s
(C) 330 m/s   (D) 300 m/s

26. In a plane mirror, an object is 0.5 m in front of the mirror. The distance between object and image is -
(A) 0.5 m   (B) 1 m
(C) 0.25 m   (D) 0.75 m

27. An object 0.5 m tall is in front of a plane mirror at a distance of 0.2 m. The size of the image formed is-
(A) 0.2 m   (B) 0.5 m
(C) 0.1 m   (D) 1 m

28. The letter that show lateral inversion-
(A) Z   (B) M
(C) O   (D) W

29. A ray of light is incident on a plane mirror at an angle of incidence of 30°. The deviation produced by the mirror is-
(A) 30°   (B) 60°
(C) 90°   (D) 120°

30. Two plane mirrors are inclined to one another at an angle of 40°. A point object is placed in between them. The number of images formed due to reflection at both mirrors is-
(A) Infinite   (B) 9
(C) 8   (D) 6

CHEMISTRY

1. A base reacts with an acid to forms salt and water. What is this reaction called?
(A) Oxidation reaction.
(B) Neutralisation reaction
(C) Reduction reaction.
(D) Ionisation reaction.

2. The cut off 'wool coat' of a sheep alongwith a thin layer of skin is called :
(A) grease   (B) fleece
(C) fleet   (D) skeet

3. From where is the natural indicator litmus extracted?
(A) Mycorrhizu   (B) Lichens
(C) Mucor   (D) Mycelia

4. A base reacts with an acid to forms salt and water. What is this reaction called?
(A) Oxidation reaction.
(B) Neutralisation reaction
(C) Reduction reaction.
(D) Ionisation reaction.

5. Which of the following statements are true of wind speed on a Beaufort scale?
(i) Wind at a speed of 4 km/h is called breeze.
(ii) Wind at a speed of 8 km/h is called a strong wind.
(iii) Wind at a speed of 9 km/h and above is called storm.
(A) Only (i) and (ii)   (B) Only (ii) and (iii)
(C) Only (i) and (iii)   (D) Only (iii)

6. Galvanization is a process use to prevent the rusting of which of the following
(A) Iron   (B) Zinc
(C) Aluminium   (D) Copper

7. The silkworm is :
(A) a caterpillar
(B) a larva
(C) a caterpillar as well as larva
(D) neither caterpillar nor larva

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(A) Only (i) and (ii)   (B) Only (ii) and (iii)
(C) Only (i) and (iii)   (D) Only (iii)

9. The wool of sheep is removed only once a year before the beginning of :
(A) spring season
(B) summer season
(C) winter season
(D) rainy season

10. Which of the following fibres are made of proteins ?
(A) silk and cotton
(B) natural silk and artificial silk
(C) rayon and wool
(D) wool and silk

11. One of the following is not an organic acid. This is :
(A) acetic acid (B) formic acid
(C) citric acid (D) carbonic acid

12. The rusting of iron can be prevented by coating it with a layer of :
a. Zinc b. Sodium
c. Chromium d. Carbon
(A) a and b (B) b and c
(C) a and c (D) b and d

13. The gas we use in the kitchen is called liquefied petroleum gas (LPG). In the cylinder it exists as liquid. When it comes out from the cylinder, it becomes a gas (change - A), then it burns (change - B). the following statements partain to these changes. Choose the correct one.
(A) Process A is a chemical change.
(B) Process B is a physical change.
(C) Process A is a physical change but B is a chemical change.
(D) Process A is a chemical change but B is a physical change.

14. Anaerobic bacteria digest animal waste and produce biogas (change A). The biogas is then burnt as fuel (change B). The following statements partain to these changes. Choose the correct one :
(A) A is a chemical change whereas B is a physical change.
(B) B is a chemical change whereas A is a physical change.
(C) Both A and B are physical changes.
(D) Both a and B are chemical changes.

15. Sulphur element is said to be :
(A) Ductile (B) Hard
(C) Malleable (D) Brittle

16. The non-metal which exists in the liquid state at room temperature is :
(A) Fluorine (B) Chlorine
(C) Bromine (D) Iodine

17. The element which is stored under kerosene is:
(A) Sulphur (B) Phosphorus
(C) Sodium (D) Silicon

18. Which of the following metal exists in the liquid state at room temperature?
(A) Magnesium (B) Magnanese
(C) Mercury (D) Sodium

19. Which of the following elements is a metalloid?
(A) Sodium (B) Sulphur
(C) Silicon (D) Silver

20. The least reactive metal among the following is :
(A) Magnesium (B) Lead
(C) Silver (D) Sodium

21. Which of the following reacts with cold water vigorously?
(A) Carbon (B) Sodium
(C) Magnesium (D) Sulphur

22. Metals generally react with dilute acids to produce hydrogen gas. Which one of the following metals does not react with dilute hydrochloric acid?
(A) Magnesium (B) Aluminium
(C) Iron (D) Copper

23. Which one of the following is used for making pencil lead ?
(A) Graphite (B) Diamond
(C) Sulphur (D) None

24. The metal that melts even when kept on the palm is
(A) Cobalt (B) Gallium
(C) Nickel (D) Mercury

25. Which of the following metal cannot displaced hydrogen ?
(A) Copper (B) Silver
(C) Gold (D) All of these

26. A basic oxide will be formed by the element:
(A) sulphur (B) phosphorus
(C) potassium (D) carbon

27. Metals are generally hard. Which of the following metals is an exception and can be cut with a knife?
(A) Iron (B) Sodium
(C) Gold (D) Magnesium

28. The element Z burns in air to form an oxide. The aqueous solution of this oxide turns blue litmus to red. The element Z is most likely to be.
(A) carbon (B) calcium
(C) iron (D) magnesium

29. Which of the following elements will produce an oxide that will dissolve in water to form an acid?
(A) carbon
(B) calcium
(C) chromium
(D) copper

30. The substance that will be flattened on beating with a hammer is
(A) Crystal of iodine
(B) Lump of sulphur
(C) Piece of coal
(D) Zinc granule

BIOLOGY

1. The mineral needed by plants to make proteins is :
(A) neon
(B) iodine
(C) nitrogen
(D) calcium

2. Gaseous exchange and photosynthesic take place in the leaves of plants. The table shown how the gases P, Q, R and S are involved in the two processes.

Process	Gas taken in	Gas given out
Respiration	P	Q
Photosynthesis	R	S

Which of the following correctly identifies P, Q, R and S?

P	Q	R	S
Water vapour	Oxygen	Carbon dioxide	Carbon dioxide
Carbon dioxide	Oxygen	Oxygen	Water vapour
Oxygen	Carbon dioxide	Hydrogen	Hydrogen
Oxygen	Carbon dioxide	Carbon dioxide	Oxygen

3. Which of the following processes involves oxidation of food within a living body for the release of energy?
(A) Photosynthesis
(B) Respiration
(C) Reproduction
(D) Excertion

4. Mature ovary forms the :
(A) seed
(B) stamen
(C) pistil
(D) fruit

5. Water from the undigested food is absorbed mainly in the
(A) stomach
(B) foodpipe
(C) small intestine
(D) large intestine

6. In a cactus plant, food is made by :
a. Branches
b. Roots
c. Leaves
d. Stem
(A) a and b
(B) b and c
(C) only c
(D) a and d

7. Frogs have the ability to live both on land and in water. Which of the following adaptations enable them to do so?
(i) They can trap air bubbles in their throat.
(ii) They have webbed feet that help them to swim and leap on land.
(iii) They have lungs to help them breathe when they are on land.
(iv) Their skin when kept moist, can take in the oxygen dissolved in the water.
(A) Only (and (ii)
(B) Only (ii) and (iii)
(C) Only (i) and (iii)
(D) Only (ii), (iii) and (iv)

8. Which of the following are saprophytes?
a. Mango
b. Mushroom
c. yeast
d. Yak
(A) a and b
(B) b and c
(C) c and d
(D) a and d

9. Which of the following show symbiosis?
a. Alga and fungus
b. alga and fish
c. Rhizobium and pea plant
d Rhizobium and money plant
(A) a and b
(B) b and c
(C) a and c
(D) c and d

10. Which of the following is not required for photosynthesis by the green leaves of a plant?
(A) carbon dioxide
(B) oxygen
(C) sunlight
(D) water

11. Mucus, hydroachloric acid and digestive juices are secreted by the inner lining of:
(A) pancreas   (B) stomach
(C) small intestine   (D) salivary glands

12. The site of complete digestion and absorption of food in the human digestive system is:
(A) stomach   (B) small intestine
(C) large intestine   (D) rectum

13. In human beings, the 16 teeth of each jaw consist of :
(A) 2 incisors, 4 canines, 4 premolars and 6 molars
(B) 4 incisors, 2 canines, 6 premolars and 4 molars
(C) 4 incisors, 2 canines, 4 premolars and 6 molars
(D) 2 incisors, 4 canines, 6 premolars and 4 molars

14. Which of the following is most likely to have a much higher breathing rate ?
(A) man   (B) dog
(C) sparrow   (D) fish

15. Which of the following reproduces by the method of fragmentation ?
(A) potato   (B) bryophyllum
(C) spirogyra   (D) almonds

16. The seeds/fruits of which of the following plant are not dispersed by wind ?
(A) drumstick   (B) grass
(C) coconut   (D) cotton

17. One of the following is not produced by the action of decomposers on the dead parts of plants and dead bodies of animals. This one is :
(A) carbon dioxide   (B) oxygen
(C) water   (D) nutrients

18. Cheek cells do not have _____
(A) Cell membrane (B) Golgi apparatus
(C) Nucleus   (D) Plastids

19. Coagulation of blood in a cut or wound is brough about by :
(A) plasma   (B) platelets
(C) white blood cells   (D) red blood cells

20. Which of the following helps in the upward movement of water and dissolved minerals from the roots to the leaves through the stem ?
(A) transportation   (B) translocation
(C) tropic movement   (D) transpiration

21. Which of the following is the correct sequence of events in the sexual reproduction of a plant from the flowers ?
(A) pollination, seed, fertilisation, germination
(B) pollination, fertilisation, seed, germination
(C) pollination, seed, germination, fertilisation
(D) pollination, fertilisation, germination, seed

22. Which of the following statements is not correct ?
(A) forests protect the soil from erosion
(B) plants and animals in a forest are not dependent on one another
(C) forests influence the climate and water cycle
(D) soil helps forests to grow and regenerate

23. largest cell is -
(A) Nerve cell   (B) Ostrich egg
(C) Muscle cell   (D) Bacteria

24. .... Have Irregular shape
(A) RBC   (B) WBC
(C) Amoeba   (D) Both B&C

25. Who discovered living cell?
(A) Schwann   (B) Robert brown
(C) Robert hooke   (D) Leeuwenhoek

26. $1 \mu m$ is equal to -
(A) 10^6 m   (B) 10^{-6} m
(C) $\dfrac{1}{10^{-6}} m$ (D) 6 m

27. Read the following terms and select the pair that is related to inheritance of characters.
(A) Cell wall and cell membrane
(B) Chromosome and mitochondria
(C) Chloroplast and cell membrane
(D) Chromosome and genes

28. Which of the following feature will help you in distinguishing a plant cell from an animal cell?

(A) Cell wall   (B) Mitochondria

(C) Cell membrane   (D) Nucleus

29. Identify the statement which is true for cells

(A) Cells can be easily seen with naked eyes.

(B) Insect's eggs is not a cell.

(C) A single cell can perform all the functions in a unicellular organism.

(D) The size and shape of cells is uniform in multicellular organisms.

30. The table given below has certain terms and four blank spaces named A, B, C and D

Cell	Feature/Part	Function
Amoeba	A	Movement
Plant Cell	Plastid	B
C	Spindle shaped	Contraction
Nerve Cell	D	Stimuli and response

From the options given below choose the correct combination of terms -

(A) A - Pseudopodia; B-Respirations; C-Muscle Cell; D-Branched

(B) A-Pseudopodia; B-Photosynthesis; C-Muscle Cell; D-Branched

(C) A-Contractile vacuole; B-Photosynthesis; C-Blood Cell; D-Spindle shaped

(D) A-Pseudopodia; B-Photosynthesis; C-Cheek cell; D-Spindle shaped

MATHEMATICS

1. The hour hand of a clock is 4.5 cm long. What distance on the clock does its tip cover in 12 hours?

(A) 56.56 cm   (B) 33.6 cm

(C) 28.28 cm   (D) 20 cm

2. In the given figure, a square of area 50 sq. units is inscribed in a circle with centre O.

Which of the following is the circumference of the circle?

(A) $100\,\pi$ units   (B) $25\,\pi$ units

(C) $50\,\pi$ units   (D) $10\,\pi$ units

3. If $x^2 + \dfrac{1}{x^2} = 7,$ then the vaue of $x^3 + \dfrac{1}{x^3}$ is

(A) 9   (B) 18

(C) 27   (D) 14

4. 10 men and 15 women finish a work in 6 days. One man alone finishes that work in 100 days. In how many days will a women finish the work?

(A) 125 days   (B) 150 days

(C) 90 days   (D) 225 days

5. A wire is bent into the shape as shown. It is made up of 5 semi-circles. What is the length of the wire? (Take $\pi = 3.14$)
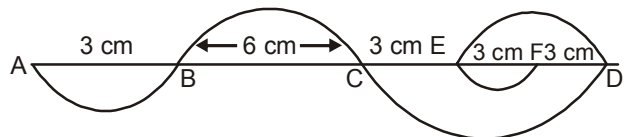
(A) 27 cm   (B) 42.39 cm

(C) 45 cm   (D) 27.92 cm

6. The number of integers between $-\sqrt{8}$ and $\sqrt{32}$ is :

(A) 5   (B) 6

(C) 7   (D) 8

7. If an angle of a regular polygon is 165°, then the number of sides of the polygon is

(A) 30   (B) 24

(C) 18   (D) 15

8. The figures in the rectangle are 8 identical quadrants. What is the area of the shaded part? (Take $\pi = 3.14$)
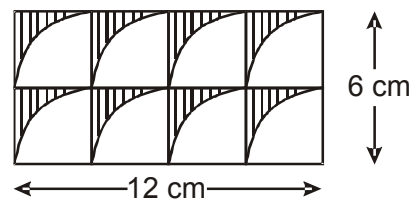
(A) 22.52cm²   (B) 15.48 cm²

(C) 56.52 cm²   (D) 28.36 cm²

9. If HCF (p,q) = 12 and then p x q = 1800n then LCM (p,q) is :
(A) 3600   (B) 900
(C) 150   (D) 90

10. If 24-carat gold is 100% pure gold, then what percentage of pure gold isin 22-carat gold?
(A) $61\dfrac{2}{3}\%$ (B) $71\dfrac{2}{3}\%$
(C) $81\dfrac{2}{3}\%$ (D) $91\dfrac{2}{3}\%$

11. The sum of additive inverse and multiplicative inverse of $\dfrac{-3}{5}$
(A) $\dfrac{-15}{16}$ (B) $\dfrac{-16}{15}$
(C) $\dfrac{16}{15}$ (D) $\dfrac{34}{15}$

12. Which is the decimal form of $\dfrac{7}{2^3 \times 5^2}$
(A) 0.070   (B) 0.70
(C) 0.035   (D) 0.35

13. Which is the equivalent rational number of $\dfrac{-5}{11}$.
(A) $\dfrac{-50}{1100}$ (B) $\dfrac{-45}{55}$
(C) $\dfrac{-55}{121}$ (D) $\dfrac{-10}{-22}$

14. Reciprocal of $\left(\dfrac{1}{a^m}\right)^{-1}$ is
(A) a^{-m} (B) $\dfrac{1}{a^{-m}}$
(C) $\dfrac{-1}{a^m}$ (D) a^m

15. Standard form of $\dfrac{438}{365}$ is
(A) $\dfrac{4}{5}$ (B) $\dfrac{5}{6}$
(C) $\dfrac{2}{3}$ (D) $\dfrac{6}{5}$

16. Descending order of $\dfrac{-2}{3}, \dfrac{4}{5}, \dfrac{1}{2}$ and $\dfrac{3}{4}$ is
(A) $\dfrac{4}{5}, \dfrac{1}{2}, \dfrac{3}{4}, \dfrac{-2}{3}$ (B) $\dfrac{4}{5}, \dfrac{3}{4}, \dfrac{1}{2}, \dfrac{-2}{3}$
(C) $\dfrac{1}{2}, \dfrac{4}{5}, \dfrac{3}{4}, \dfrac{-2}{3}$ (D) $\dfrac{3}{4}, \dfrac{4}{5}, \dfrac{1}{2}, \dfrac{-2}{3}$

17. Which of the rational number between $\dfrac{-11}{30}$ and $\dfrac{-12}{30}$
(A) $\dfrac{-1}{20}$ (B) $\dfrac{-16}{50}$ (C) $\dfrac{-19}{50}$ (D) $\dfrac{-17}{50}$

18. What must be added to $\left(1 - x + x^2 - 2x^3\right)$ to obtain x^3 ?
(A) $x^3 - x^2 + x - 1$ (B) $-1 + x + x^2 - 3x^3$
(C) $3x^3 - x^2 + x - 1$ (D) None

19. If $2.5252525.... = \dfrac{p}{q}$ (in the lowest form) then what is the value of $\dfrac{q}{p}$?
(A) 0.4   (B) 0.42525
(C) 0.0396   (D) 0.396

20. Which of the following is not the reciprocal of $\left(\dfrac{2}{3}\right)^4$?
(A) $\left(\dfrac{3}{2}\right)^4$ (B) $\left(\dfrac{2}{2}\right)^{-4}$
(C) $\left(\dfrac{3}{2}\right)^{-4}$ (D) $\dfrac{3^4}{2^2}$

21. Find x, if $8^{x-2} \times \left(\dfrac{1}{2}\right)^{4-3x} = \left(0.0625\right)^x$
(A) 0   (B) 4
(C) 2   (D) 1

22. If $2^{x+4} - 2^{x+2} = 3$, then x is equal to
(A) 0   (B) 2
(C) −1   (D) −2

23. $\left[1 - 2\left(1 - 2\right)^{-1}\right]^{-1}$ equals
(A) $\dfrac{1}{3}$ (B) $-\dfrac{1}{3}$
(C) −1   (D) $\dfrac{1}{2}$

24. The value of $\sqrt{5\sqrt{5\sqrt{5....}}}$ is
(A) 1   (B) 2.5
(C) 5   (D) 25

25. If $x^y = y^x$, then $\left(\dfrac{x}{y}\right)^{x/y}$ is equal to

(A) $x^{x/y}$ (B) $x^{\frac{x}{y}-1}$

(C) $x^{y/x}$ (D) $x^{\frac{y}{x}-1}$

26. If $\sqrt{2} = 1.414$, then the value of $\dfrac{\sqrt{2}-1}{\sqrt{2}+1}$ is

(A) 0.172   (B) 0.414

(C) 0.586   (D) 1.414

27. The value of $\dfrac{(243)^{0.13} \times (243)^{0.07}}{(7)^{0.25} \times (49)^{0.075} \times (343)^{0.2}}$ is

(A) $\dfrac{3}{7}$ (B) $\dfrac{7}{3}$

(C) $1\dfrac{3}{7}$ (D) $2\dfrac{2}{7}$

28. Simplify : $\dfrac{0.\overline{3} \times 1.\overline{06}}{0.\overline{5} \times 0.\overline{4}}$

(A) $\dfrac{31}{44}$ (B) $\dfrac{63}{44}$

(C) $\dfrac{32}{63}$ (D) $\dfrac{44}{111}$

29. The value of x, if $2^x + 2^x + 2^x = 192$ is

(A) 5   (B) $\dfrac{1}{6}$

(C) 6   (D) None of these

30. If $4^{2x} = \dfrac{1}{32}$, then x is

(A) $\dfrac{5}{4}$ (B) $\dfrac{4}{5}$

(C) $\dfrac{3}{5}$ (D) $-\dfrac{5}{4}$

SOCIAL SCIENCE

1. The last dynasty of the Delhi Sultanate was-

(A) Khalji   (B) Sayyids

(C) Lodhi   (D) Slave

2. Which among the following is not one of the nodel centres of British in India ?

(A) Bombay   (B) Calcutta

(C) Masulipatnam   (D) Madras

3. Archives are places where _____ are kept

(A) Manuscripts   (B) Animals

(C) Coins   (D) None of these

4. The main aim of product advertising is to

(A) Improve the advertiser's image

(B) Send out messages to help people

(C) Encourage people to buy goods and services

(D) Give information

5. Brahmanas often received land grants called as

(A) Jagir   (B) Brahmadeya

(C) Devedana   (D) Bigland

6. Ox-bow lakes are found in -

(A) glaciers   (B) Deserts

(C) River Valleys   (D) Sea

7. The most important layer of the atmosphere where almost all weather phenomena occurs is -

(A) Troposphere   (B) Exosphere

(C) Stratosphere   (D) Mesosphere

8. Which of the following parties were involved in the "Tripartitle Struggle"?

(A) Cholas, Chahamanas, Rashtrakutas

(B) Gurjara - Paratiharas, Rashtrakutas and Palas

(C) The Palas, The pratiharas and the Rasthrakutas

(D) The Pratiharas, the Polas and Mauryas

9. Warm ocean currents originate from

(A) Tropics   (B) Equator

(C) Poles   (D) Antarctica

10. Which of these in an example of a periodic wind ?

(A) Loo   (B) Polar Easterlies

(C) Westerlies   (D) Monsoon

11. Convectional rainfall is most common in the

(A) Polar Regions

(B) Equatorial region

(C) Subpolar Regions

(D) Subtropical Regions

12. The forces of the moon and the sun act in the same line giving rise to spring tides every
(A) Full moon day
(B) New Moon Day
(C) Full Moon and New Moon Day
(D) Spring Seasons

13. The Sufis
(A) Believed in many gods
(B) Strictly followed the Islamic Code of Social Conduct
(C) Were tolerant of Other religions
(D) Promoted brotherhood among men from all sections of society

14. Sandstone, clay and shale are
(A) Metamorphic rocks
(B) Sedimentary Rocks
(C) Igneous Rocks
(D) Fossil Fuels

15. In the following diagram, which parts have been wrongly labelled?
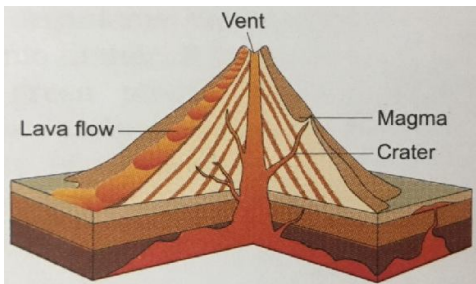
(A) Vent
(B) Lava Flow
(C) Crater
(D) Magma

16. Match the Column :

	Column I		Column II
(i)	Rajaraja I	a.	Kitab-al-Hind
(ii)	Al-biruni	b.	Ganga Valley
(iii)	Kadamba Mayursharman	c.	Rajasthan
(iv)	Gujara Pratihara Harischandra	d.	Karnataka

(A) i - b, ii- a, iii - d, iv - c
(B) i - c, ii - a, iii - d, iv - b
(C) i - b, ii - d, iii - c, iv - a
(D) None of these

17. Resources which are found in a region but have not been utilised.
(A) Renewable
(B) Developed
(C) National
(D) Potential

18. The British completed their first census survey of India around the
(A) mid-fifreenth century
(B) mid-eighteenth century
(C) early nineteenth century
(D) late nineteenth century

19. Which of these sources can provide information about court prouedings from the British period in India?
(A) Survey
(B) Administrative records
(C) Newspapers reports
(D) Low books

20. Which of the following properties of a substance does not make it a resources?
(A) Utility
(B) Value
(C) Quantity
(D) Originality

21. Using resources carefully so as to give them a gap to get renewed is called........... .
(A) sustainable development
(B) depletion of resources
(C) renewable resources
(D) conservation of resources

22. .... were formed from dead remains of animals and plants which have been buried under the earth for thousands of years.
(A) Renewable resources
(B) Man-made resources
(C) Ubiquitous resources
(D) Fossil fuels

23. We need Constitution because?
(A) It highlights the strnctures of government
(B) It clearly indicates the limits on the powers of government
(C) It guarantees the rights of the people

(D) All of the above

24. Which of the following resources is non-renewable but be recycled ?
(A) Coal
(B) Water
(C) Wood
(D) Iron

25. Constitution is
(A) the governing council of the state
(B) The head of the state
(C) Collection of rules and regulations
(D) law making body

26. Which one of the following is non-recyclable?
(A) Paper   (B) Iron
(C) Coal   (D) Gold

27. The constitutional body that makes decision regarding the elections in India is
(A) Supreme Court
(B) UPSC
(C) Election Commission
(D) Auditor-General

28. Constitutional amendments are the
(A) Static document
(B) Powers of executive
(C) Set of values that changes from time to time
(D) Unalterable.

29. Which of the following is an inexhaustible resource?
(A) forests   (B) wildlife
(C) sunlight   (D) fossil fuels

30. Fallow land refers to -
(A) Land not under cultivation
(B) Land with many gullies
(C) A fertile land
(D) Cultivable land not cultivated for a season to regain its fertility

MENTAL ABILITY

Directions : Find the missing term in the given figures

1.
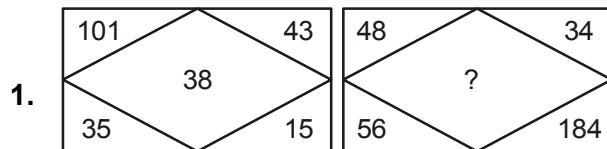
(A) 127   (B) 142
(C) 158   (D) 198

2. In a certain code, MONKEY is written as XDJMNL. How is TIGER written in that code?
(A) QDFHS   (B) SDFHS
(C) SHFDQ   (D) UJHFS

3. If rains is called pink, pink is called cloud, cloud is called water, water is called breeze, and breeze is called moon, what do you wash your hands with?
(A) Water   (B) Rain
(C) Breeze   (D) Moon

4. Arrange the given words in alphabetical order and tick the one that comes last.
(A) plane   (B) plain
(C) player   (D) place

5. If + is x,– is +, x is ÷ and ÷ is –, then what is the value of given equation 21 ÷ 8 + 2 – 12 x 3 = ?
(A) 14   (B) 9
(C) 13.5   (D) 11

Directions : Each of the following questions consists of five figures marked 1, 2, 3, 4 and 5. These figures form a series. Find out the one from the answer figures that will continue the series.

6. Problem Figures

(1) (2) (3) (4) (5)
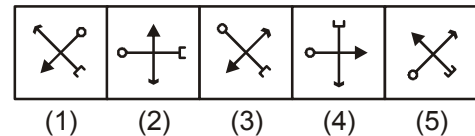
Answer Figures
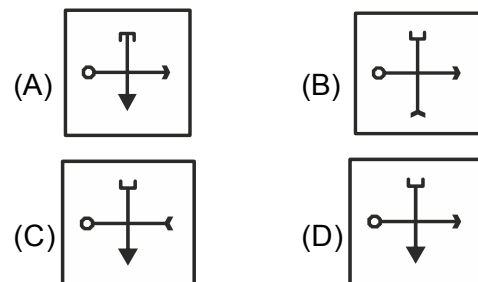
7. 3, 1, 4, 5, 9, 14, 23, ?
Find the missing number:
(A) 32   (B) 37
(C) 41   (D) 28

8.
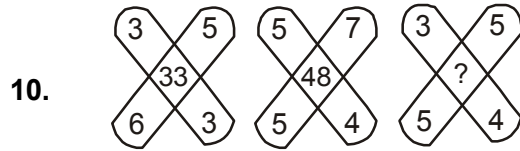

(A) 140   (B) 150
(C) 200   (D) 180

9. Find out the two signs to be interchanged for making following equation correct :

$$9 + 5 \div 4 \times 3 - 6 = 12$$

(A) $+$ and $\times$ (B) $\div$ and $\times$
(C) $\div$ and -   (D) $+$ and -

Direction : (10) Find the missing numbers:

10.

(A) 47   (B) 45
(C) 37   (D) 35

11. Find the missing number
3, 12, 27, 48, 75, 108, ?
(A) 192   (B) 183
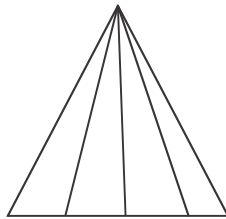(C) 162   (D) 147

Direction : (12) Find the missing numbers:
12. 0, 6, 20, 42, 72, ?
(A) 106   (B) 112
(C) 110   (D) 108

13. In a row of ten boys, when Rohit was shifted by two placed towards the left, he becomes seventh from the left end what was his earlier position from the right end of the row ?
(A) First   (B) Second
(C) Fourth   (D) Sixth

14. How many triangles in given figure

(A) 7   (B) 8
(C) 9   (D) 10

15. Sushant introduces Raj as the son of the only brother of his father's wife. How is Raj related to Sushant?
(A) Cousin   (B) Son
(C) Uncle   (D) Son-in-law

16. In the letter series one term is missing as shown. Choose the missing term out of the options
BF, CH, ..., HO, LT
(A) DN   (B) TV
(C) EK   (D) EM

Direction (17) : In the following question, four figures are given. Three of them are alike in a certain way and one is different. Find the odd one from the alternatives.

17.
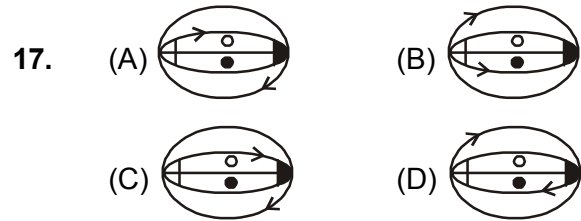
18. In a row of trees, one tree is 11th from either end of the row. How many trees are there in the row?
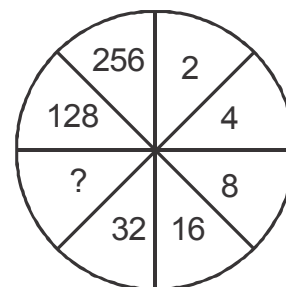(A) 22   (B) 23
(C) 21   (D) None of these

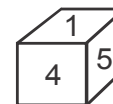**19.** Which letter represents the set of persons who play all the three games?
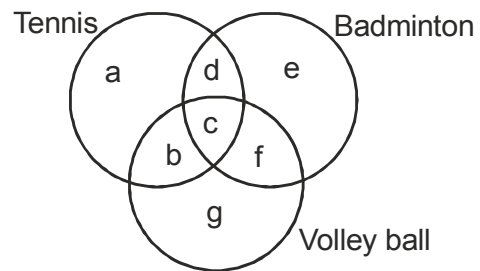
(A) b   (B) c
(C) f   (D) g

20. Find the missing number
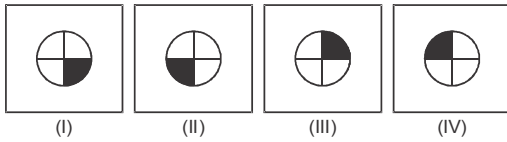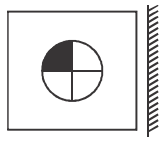

(A) 64   (B) 36
(C) 34   (D) 60

21. Which number is opposite 4 in a standard dice give below?

(A) 1   (B) 3
(C) 5   (D) Can't determined

22. Choose the correct mirror image from the given figures.

(I)   (II)   (III)   (IV)

(A) I   (B) II

(C) III   (D) IV

23. Choose the alternative which is closely resembles the water-image of the given combination.
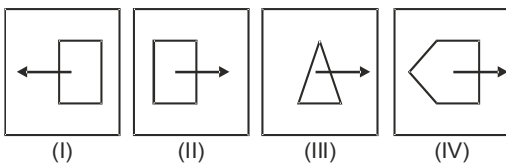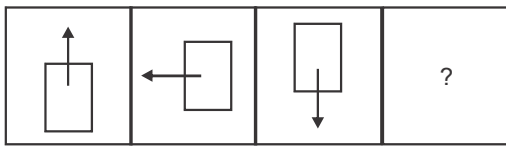
ACOUSTIC

(A) ∀COUSTIC   (B) ∀CONSTIC

(C) ∀CONSTIC   (D) ∀CONSTIC

24. Amit walks 2 km South, turned right and walked 1 km, again turned North and walked 5 km, turned East and walked 5 km. How far is he from the starting point?

(A) 3 km   (B) 7 km

(C) 5 km   (D) 6 km
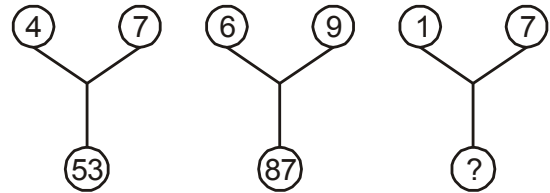
25. Which figure will come in place of ?

(I)   (II)   (III)   (IV)

(A) I   (B) II

(C) III   (D) IV

26. Find the missing letters :

A3P, C5N, E8K, G12G, ?

(A) I15D   (B) I17B

(C) I17D   (D) J16B

27. Find the missing number(s) :

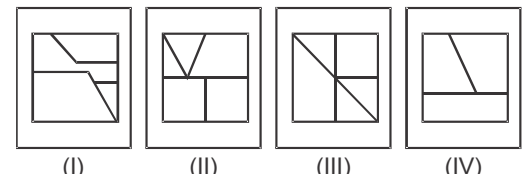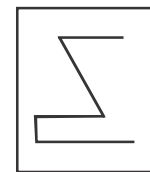(A) 49   (B) 50

(C) 48   (D) 55

28. In a certain code 'MONKEY' is written as XDJMNL, how is 'TIGER' written in that code?

(A) SHFDQ   (B) QDFHS

(C) SDFHS   (D) QDHJS

29. If L denotes x, M denotes ÷, P denotes + and Q denotes –, then 16 P 24 M 8 Q 6 M 2 L 3 = ?

(A) $\dfrac{13}{6}$ (B) $-\dfrac{1}{6}$

(C) $14\dfrac{1}{2}$ (D) 10

30. Find out that answer figure in which the question figure is embedded

(I)   (II)   (III)   (IV)

(A) I   (B) II

(C) III   (D) IV

SAMPLE QUESTIONS FOR VIII TO IX MOVING

PHYSICS

1. Which of the following is the action-at-distance force ?
   (A) muscular force
   (B) frictional force
   (C) magnetic force
   (D) mechanical force

2. The process in which any electrolyte gets decomposed when electricity is passed through it, is called
   (A) electrolysis   (B) decomposition
   (C) dissociation   (D) splitting

3. The force exerted by one object on another by virtue of their masses is
   (A) magnetic force
   (B) electrostatic force
   (C) gravitational force
   (D) frictional force

4. Sound cannot travel through
   (A) air   (B) water
   (C) iron   (D) vacuum

5. The audible range of frequency is
   (A) 200-2000 Hz   (B) 20-20000 Hz
   (C) 20-23000 Hz   (D) 220-20000 Hz

6. The standard unit of force is
   (A) metre/second   (B) newton
   (C) metre/second^2 (D) gram-weight

7. The Celestial objects are:
   (A) The stars   (B) The planets
   (C) The Moon   (D) All of the above

8. The day on which the whole disc of the moon is visible is known as the
   (A) Full moon day   (B) Lunar eclipse
   (C) Solar eclipse   (D) No moon day

9. A force applied on a moving body may
   (A) bring it to rest
   (B) increase its speed
   (C) decrease the speed
   (D) all of the above

10. A mass kept on a smooth floor is exerted a 20N force parallel to the surface. when a force of 12N acts additionally in the same direction, its acceleration is 4 m/s^2. Find the mass of body.
    (A) 4 kg   (B) 6 kg
    (C) 8 kg   (D) 10 kg

11. The pressure at any point in a liquid at rest depends only on the depth and on the ...... of the liquid.
    (A) density   (B) weight
    (C) colour   (D) none of these

12. A positively charged ion is called
    (A) atom   (B) anion
    (C) cation   (D) neutral ion

13. The instrument needed to measure the current flowing through a circuit is ?
    (A) voltmeter   (B) voltameter
    (C) galvanometer   (D) ammeter

14. A pressure of 10 kPa acts on an area of 0.3 m^2. The force acting on the area will be:
    (A) 3000 N   (B) 30 N
    (C) 3 N   (D) 300 N

15. Which of the following is the least ?
    (A) Static friction
    (B) Sliding friction
    (C) Rolling friction
    (D) Limiting friction

16. In a plane mirror, an object is 0.5 m in front of the mirror. The distance between object and image is -
    (A) 0.5 m   (B) 1 m
    (C) 0.25 m   (D) 0.75 m

17. An object 0.5 m tall is in front of a plane mirror at a distance of 0.2 m. The size of the image formed is-
    (A) 0.2 m   (B) 0.5 m
    (C) 0.1 m   (D) 1 m

18. Friction between two flat surface can be reduced by,
(A) Greasing   (B) Painting
(C) Using ball bearing (D) All of these

19. Ball bearings are used to
(A) Increase friction
(B) Decrease friction
(C) Optimize friction
(D) Remain same

20. A tightended string of instrument produces sound of .... frequency.
(A) lower   (B) higher
(C) same   (D) none of these

21. A mosquito produces sound by vibrating its...
(A) wings   (B) vocal cords
(C) legs   (D) body

22. The letter that show lateral inversion-
(A) Z   (B) M
(C) O   (D) W

23. A ray of light is incident on a plane mirror at an angle of incidence of 30°. The deviation produced by the mirror is-
(A) 30°   (B) 60°
(C) 90°   (D) 120°

24. Two plane mirrors are inclined to one another at an angle of 40°. A point object is placed in between them. The number of images formed due to reflection at both mirrors is-

(A) Infinite   (B) 9
(C) 8   (D) 6

25. The smallest particle of matter is ....
(A) An electron   (B) A proton
(C) A neutron   (D) A atom

26. The neutron carries a charge of ....
(A) 1.66×10^{-19} Coulomb
(B) -1.66×10^{-19} Coulomb
(C) No charge
(D) None of these

27. Static electricity ....
(A) Does not flow
(B) Flows in the circuit
(C) Sometimes flows
(D) None of these

28. The first Indian satellite:
(A) Kalpana-1   (B) Aryabhatta
(C) INSAT   (D) EDUSAT

29. A spring balance is used for measuring
(A) weight   (B) speed
(C) acceleration   (D) mass

30. An object produces a sound of 15 Hz. Which of the following is correct ?
(A) this sound can be heard by us
(B) this sound cannot be heard by us
(C) it does not produce sound
(D) this sound can be heard only through solids

CHEMISTRY

1. An element is soft and can be cut easily with a knife. It is very reactive and cannot be kept open in the air. It reacts vigorously with water. This element is most likely to be :
(A) Magnesium   (B) Potassium
(C) Phosphorus   (D) Aluminium

2. Sulphur element is said to be :
(A) Ductile   (B) Hard
(C) Malleable   (D) Brittle

3. The element which is stored under kerosene is:
(A) Sulphur   (B) Phosphorus
(C) Sodium   (D) Silicon

4. Which of the following elements is a metalloid?
(A) Sodium   (B) Sulphur
(C) Silicon   (D) Silver

5. Which of the following reacts with cold water vigorously?
(A) Carbon   (B) Sodium
(C) Magnesium   (D) Sulphur

6. Metals generally react with dilute acids to produce hydrogen gas. Which one of the following metals does not react with dilute hydrochloric acid?
(A) Magnesium   (B) Aluminium
(C) Iron   (D) Copper

7. The metal that melts even when kept on the palm is
(A) Cobalt   (B) Gallium
(C) Nickel   (D) Mercury

8. Metals are generally hard. Which of the following metals is an exception and can be cut with a knife?
(A) Iron   (B) Sodium
(C) Gold   (D) Magnesium

9. The element Z burns in air to form an oxide. The aqueous solution of this oxide turns blue litmus to red. The element Z is most likely to be.
(A) carbon   (B) calcium
(C) iron   (D) magnesium

10. Which of the following elements will produce an oxide that will dissolve in water to form an acid?
(A) carbon   (B) calcium
(C) chromium   (D) copper

11. What is the chemical formula of copper sulphate?
(A) $CuSO_4$ (B) $CuCO_3$
(C) $CuCl_2$ (D) CuO

12. Which one of the following gas burns with the "pop" sound?
(A) Oxygen   (B) Hydrogen
(C) Chlorine   (D) Hydrogen sulphide

13. Rayon is different from truly synthetic fibres because :
(A) It has a silk-like appearance.
(B) It is obtained from wood pulp.
(C) Its fibres can be woven like those of natural fibres.
(D) It can be dyed in wide variety of colours.

14. The synthetic polymer which can be used as a substitute for wool for making sweaters and shawls, etc., is :
(A) Nylon   (B) Polyester
(C) Terylene   (D) Acrylic

15. Which of the following is not a synthetic fibre?
(A) Nylon   (B) Flax
(C) Acrylic   (D) Polyester

16. Which of the following is a man-made fibre prepared from wood-pulp?
(A) Flax   (B) Nylon
(C) Acrylic   (D) Rayon

17. The non-stick coating on frying pans is that of a plastic called :
(A) Polyvinyl chloride (B) Melamine
(C) Bakelite   (D) Teflon

18. Which one of the following is not a fossil fuel?
(A) Petrol   (B) Coke
(C) Charcoal   (D) Coal

19. Which of the following substances has the lowest ignition temperature?
(A) Kerosene   (B) Spirit
(C) Diesel   (D) Mustard Oil

20. On a cold winter night, a persons sleeping in a room with closed door and windows with a coal fire burning inside may die due to the excessive accumulation of :
(A) Nitrogen monoxide
(B) Nitrogen Dioxide
(C) Carbon Dioxide
(D) Carbon monoxide

21. Which of the following fuels has the lowest calorific value?
(A) Kerosene   (B) CNG
(C) Biogas   (D) LPG

22. Petroleum is mainly a mixture of which one of the following class?
(A) Carbohydrates (B) Carbogens
(C) Hydrocarbons (D) Alcohols

23. Which one of the following is a petro-chemical?
(A) Ammonia   (B) Coke
(C) Acetone   (D) Paraffin wax

24. Full form of LPG
(A) Light Petroleum Gas
(B) Liquefied Petroleum Gas
(C) Long Pipe of Gas
(D) Long Petroleum Gas

25. Products obtained by the process of destructive distillation are
(A) Coke, coal-tar, coal gas
(B) Petrol, diesel, kerosene
(C) Paraffin wax, bitumen
(D) Compressed natural gas

26. Main constituent of LPG is
(A) Methane   (B) Butane
(C) Ethane   (D) Propane

27. Which is non-renewable source of energy'?
(A) Natural gas
(B) Wind energy
(C) Tidal energy
(D) Mechanical energy

28. Which gas helps in the process of combustion?
(A) Cooking gas   (B) Nitrogen gas
(C) Oxygen gas   (D) Producer gas

29. Which zone represents the partial combustion in candle flame?
(A) Outer zone   (B) Middle zone
(C) Inner zone   (D) Lower zone

30. Out of these, which is able to control fires?
(A) NH_3 (B) H_2
(C) CO_2 (D) F_2

BIOLOGY

1. Who discovered the cell ?
(A) Robert hooke (1665)
(B) Robert brown (1665)
(C) Leeuwenhoek (1674)
(D) Purkinje.

2. largest cell is -
(A) Nerve cell   (B) Ostrich egg
(C) Muscle cell   (D) Bacteria

3. .... Have Irregular shape
(A) RBC   (B) WBC
(C) Amoeba   (D) Both B&C

4. Chloroplast is absent in -
(A) Lotus leaf   (B) Rose leaf
(C) Dog   (D) Euglena

5. Size of smallest cell (Bacteria) is ?
(A) $0.1 - 0.5 \, \mu m$ (B) $10 - 15 \mu m$
(C) $1 - 10 \, \mu m$ (D) $1 - 5 \mu m$

6. Read the following terms and select the pair that is related to inheritance of characters.
(A) Cell wall and cell membrane
(B) Chromosome and mitochondria
(C) Chloroplast and cell membrane
(D) Chromosome and genes

7. Choose the correct statement :
(A) Genes are located in the chromosomes
(B) Cell is located in the nucleus
(C) Chromosomes are located in the nucleolus
(D) Cell membrane surrounds the nucleus.

8. The most important function of cell membrane is that it :
(A) Controls the entry and exit of materials from cells.
(B) Controls only the entry of materials into cells.
(C) Controls only the exit of materials from cells
(D) Allows entry and exit of materials without any control.

9. Which of the following feature will help you in distinguishing a plant cell from an animal cell?
(A) Cell wall   (B) Mitochondria
(C) Cell membrane   (D) Nucleus

10. Which of the following is not a kharif crop?
(A) Paddy   (B) Mustard
(C) Maize   (D) Groundnut

11. Which of the following is not a rabi crop?
(A) Soyabean   (B) Peas
(C) Wheat   (D) Linseed

12. The process of removing unwanted plants from a crop field is called :
(A) Breeding   (B) Weeding
(C) Transplanting   (D) Harvesting

13. Weeds are the:

(A) main crop plants

(B) insects and pests

(C) unwanted plants growing along the crop

(D) chemical substances

14. In Agriculture, broadcasting is used for

(A) Ploughing the Fields

(B) Rotation the crops

(C) Removing the weeds

(D) Sowing the seed

15. The best-technique of watering the fruit plant and trees is

(A) Chain pump system

(B) Sprinkler system

(C) Moat

(D) Drip system

16. One of the following is a disease of poultry :

(A) Anthrax

(B) Pebrine disease

(C) Ranikhet disease

(D) Foot and mouth disease

17. Viruses are -

(A) Living organisms

(B) Non-living organisms

(C) In between living and non-living organisms

(D) None of the above

18. Which of the following grows on wet bread?

(A) Yeast　　　　　(B) Mould

(C) Both A and B　　(D) None

19. Yeast helps in the production of -

(A) Oxygen　　　　(B) Glucose

(C) Alcohol　　　　(D) Salts

20. Bacteriophage virus -

(A) Parasitize man

(B) Parasitize bacteria

(C) Parasitize cattles

(D) Parasitize dogs

21. Which one of the following statements is correct?

(A) Legumes fix nitrogen through specialised bacteria that lives on their leaves.

(B) Legumes are incapable of fixing nitrogen

(C) Legumes fix nitrogen only through specialised bacteria that lives in their roots

(D) Legumes fix nitrogen independently of the specialised bacteria that live in their roots

22. The bread dough rises because of :

(A) Heat　　　　　　(B) Grinding

(C) Growth of yeast cells　(D) Kneading

23. The most common carrier of communicable diseases is :

(A) Ant　　　　　　(B) Housefly

(C) Dragonfly　　　　(D) Spider

24. The part of earth in which living organisms exist (or which supports life) is called :

(A) Lithosphere　　　(B) Globe

(C) Hydrosphere　　　(D) Biosphere

25. Deforestation increases the level of one of the following in the atmosphere. This one is :

(A) Ozone　　　　　(B) Carbon dioxide

(C) Oxygen　　　　　(D) Water vapour

26. The sex of a child is determined by :

(A) The presence of an X chromosome in egg (or ovum).

(B) The presence of a Y chromosome in sperm.

(C) The age of father and mother.

(D) The length of the mother's pregnancy.

27. Adolescents should be careful about what they eat because :

(A) Proper diet develops their brains.

(B) Proper diet is needed for the rapid growth taking place in their body

(C) Adolescents feel hungry all the time.

(D) Taste buds are well developed in teenagers.

28. Which of the following human disease can be prevented by the same hormone which brings about metamorphosis in frogs?

(A) Diabetes   (B) Anaemia

(C) Goitre   (D) Rickets

29. Which of the following is not a way to conserve water?

(A) Replace   (B) Reduce

(C) Reuse   (D) Recycle

30. The phenomenon of marble cancer is due to

(A) Soot particles   (B) CFCs

(C) Fog   (D) Acid rain

MATHEMATICS

1 The sum of additive inverse and multiplicative inverse of $\dfrac{-3}{5}$

(A) $\dfrac{-15}{16}$ (B) $\dfrac{-16}{15}$

(C) $\dfrac{16}{15}$ (D) $\dfrac{34}{15}$

2. The value of $(256)^{0.16} \times (256)^{0.09}$ is

(A) 64   (B) 256.25

(C) 16   (D) 4

3. If $x = 0.\overline{7}$, then 2x is

(A) $1.\overline{4}$ (B) $1.\overline{5}$

(C) $1.\overline{54}$ (D) $1.\overline{45}$

4. If $\left(\dfrac{p}{q}\right)^{rx-s} = \left(\dfrac{q}{p}\right)^{px-q}$, then the value of x is

(A) 1   (B) $\dfrac{q+s}{p+r}$

(C) $\dfrac{q+r}{q+s}$ (D) $\dfrac{q+r}{p+s}$

5. If $2^{x+4} - 2^{x+2} = 3$, then x is equal to

(A) 0   (B) 2

(C) –1   (D) –2

6. The value of $\dfrac{3^{(12+n)} \times 9^{(2n-7)}}{3^{5n}}$ is

(A) $\dfrac{1}{3}$ (B) $\dfrac{9}{13}$

(C) $\dfrac{1}{9}$ (D) $\dfrac{2}{3}$

7. If $\sqrt{18225} = 135$, then the value of $(\sqrt{182.25} + \sqrt{1.8225} + \sqrt{0.018225} + \sqrt{0.00018225}$ is

(A) 1.499985   (B) 14.9985

(C) 149.985   (D) 1499.85

8. The square root of $(7 + 3\sqrt{5})(7 - 3\sqrt{5})$ is-

(A) $\sqrt{5}$ (B) 2

(C) 4   (D) $3\sqrt{5}$

9. Find the value of $\sqrt[3]{\sqrt{441} + \sqrt{16} + \sqrt{4}}$

(A) 3   (B) 5   (C) 7   (D) 9

10. If x + y + z = 9 & xy + yz + zx = 23, then the value of $(x^3 + y^3 + z^3 - 3xyz)$ is -

(A) 108   (B) 207

(C) 669   (D) 729

11. If $(x^5 - 9x^2 + 12x - 14)$ is divided by (x – 3), the remainder is -

(A) 184   (B) 56   (C) 2   (D) 1

12. The value of expression $(16x^2 + 24x + 9)$ for $x = -\dfrac{3}{4}$ is -

(A) 2   (B) 1

(C) 0   (D) –1

13. What is the sum of the squares of the following numbers?

$\dfrac{\sqrt{3}}{\sqrt{2}+1}, \dfrac{\sqrt{3}}{\sqrt{2}-1}, \dfrac{\sqrt{2}}{\sqrt{3}}$

(A) 16   (B) $16\dfrac{2}{3}$

(C) 18   (D) $18\dfrac{2}{3}$

14. The ages of A and B are in the ratio 5 : 7. Four years from now the ratio of their ages will be 3 : 4. The present age of B is

(A) 20 years   (B) 28 years

(C) 15 years   (D) 21 years

15. $12x^2 + 60x + 75 = ?$

(A) (2x + 5) (6x + 5)   (B) $(3x + 5)^2$

(C) $3(2x + 5)^2$ (D) None of these

16. $pq^2 + q(p - 1) - 1 = ?$

(A) $(pq + 1) (q - 1)$ (B) $p(q + 1) (q - 1)$

(C) $q(p - 1) (q + 1)$ (D) $(pq - 1) (q + 1)$

17. $1 - 2ab - (a^2 + b^2) = ?$

(A) $(1 + a - b) (1 + a + b)$

(B) $(1 + a + b) (1 - a + b)$

(C) $(1 + a + b) (1 - a - b)$

(D) $(1 + a - b) (1 - a + b)$

18. A number is first increased by 10% and then reduced by 10%. The number

(A) Does not change

(B) Decreases by 1%

(C) Increases by 1%

(D) None of these

19. A man sold two chairs for Rs. 500 each. On one he gains 20% and on the other he loses 12%. His net gain or loss per cent is

(A) 1.5% gain (B) 2% gain

(C) 1.5% loss (D) 2% loss

20. A sells a box to B at a profit of 15%, B sells the same to C for Rs. 1012 and makes a profit of 10%. A's cost price is

(A) Rs. 720 (B) Rs. 680

(C) Rs. 880 (D) Rs. 800

21. 45% of 1500 + 35% of 1700 = ?% of 3175

(A) 30 (B) 35

(C) 45 (D) None of these

22. A reduction of 20% in the price of oranges enables a man to buy 5 oranges more for Rs. 10 The price per orange before reduction was :

(A) 20 paise (B) 40 paise

(C) 50 paise (D) 60 paise

23. The difference between compound interest and simple interest on a sum for 2 years at 8% p.a. is Rs. 768. The sum is

(A) Rs. 100000 (B) Rs. 110000

(C) Rs. 120000 (D) Rs. 170000

24. If A : B = 3 : 4 and B : C = 8 : 9, then A : C is:

(A) 1 : 3 (B) 3 : 2

(C) 2 : 3 (D) 1 : 2

25. In the figure. BEST is a rhombus, Then the value of $y - x$ is

(A) 40° (B) 50°

(C) 20° (D) 10°
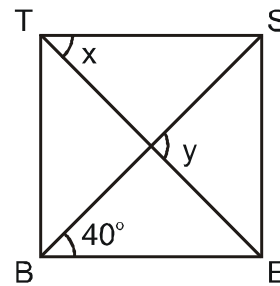
26. Which of the following is not true for an exterior angle of a regular polygon with n sides ?

(A) Each exterior angle = $\dfrac{360^o}{n}$

(B) Exterior angle = $180^o -$ interior angle

(C) $n = \dfrac{360^o}{\text{exterior angle}}$

(D) Each exterior angle = $\dfrac{(n - 2) \times 180^o}{n}$

27. The sum of the interior angles of a polygon is six times the sum of its exterior angles. Then the number of the sides of the polygon are

(A) 16 (B) 12

(C) 14 (D) 10

28. If the ratio of areas of two circles is 4 : 9, then the ratio of their circumferences will be:

(A) 2 : 3 (B) 3 : 2

(C) 4 : 9 (D) 9 : 4

29. A powder tin has a square base with side 8 cm and height 14 cm another tin has circular base of with diameter 8 cm and height 14 cm. The difference in their capacities is:

(A) 0 (B) 132 cm^3

(C) 137.1 cm^3 (D) 192 cm^3

30. The ratio of total surface area to lateral surface area of a cylinder whose radius is 20cm and height 60cm, is:

(A) 2 : 1 (B) 3 : 2

(C) 4 : 3 (D) 5 : 3

SOCIAL SCIENCE

1. Jemes mill divided the Indian History into........... periods ?
   (A) Four   (B) Three
   (C) Two   (D) Five

2. Name the type of activity that includes all those connected with extraction and production of natural resources :
   (A) Primary   (B) Tertiary
   (C) Secondary (D) Livelihood

3. Minerals are examples of
   (A) non-renewable resources
   (B) abiotic resources
   (C) potential resources
   (D) Both (A) and (B)

4. Constitution is
   (A) the governing council of the state
   (B) The head of the state
   (C) Collection of rules and regulations
   (D) law making body

5. In a monarchical constitution, the laws that are formulated are
   (A) Arbitrary in nature
   (B) Democratic in nature
   (C) Customary in nature
   (D) Moral in nature

6. Arrange the following companies in the order in which they established their trading centres in India, Starting from the first.
   (a) The Portuguese   (b) The French
   (c) The British   (d) The Dutch
   (A) a,d,c,b   (B) a,b,c,d
   (C) a,c,b,d   (D) a,d,b,c

7. Shelter belts help in
   (A) preventing leaching and wearing away of the top soil
   (B) restricting the speed of the wird these checking the soil erosion
   (C) Soil wash on slopes
   (D) None of these

8. The British Victory at _____ lad Shah Alam II to grant the Diwani of Bengal, Bihar and Odisha to the EIC.
   (A) Buxar   (B) Plassey
   (C) Seringapalam (D) Pavipat

9. Secularism means
   (A) Separation of politics from religion
   (B) Non - equality in religious affairs
   (C) Government force same one to do as per the wish of a particular religion
   (D) Following religion of government's choice

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    (A) Separation of politics from religion
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    (D) Following religion of government's choice

11. Permanent Settlement was introduced by -
    (A) Warren Hastings
    (B) Lord Cornwallis
    (C) Lord Wellesley
    (D) Narendra Modi

12. The bill is required to pass through the _____ in order to become a law
    (A) The constituent assembly
    (B) Both Lok sabha and Rajya sabha
    (C) Rajya Sabha
    (D) Lok Sabha

13. Which fundamental right protects all other fundamental rights?
    (A) Right to equality
    (B) Right to constitutional remedies
    (C) Right to freedom
    (D) None of the above

14. Contour ploughing and terrace cultivation is common along.

(A) River valleys   (B) Steep slopes

(C) Deltas   (D) Plains

15. It is not a characteristic of commercial farming

(A) Transport and communication is important

(B) Yield per hectare is low

(C) Plots of land are fragmented

(D) The pressure of population on land is high

16. The practice of growing two or more crops simultaneously on the same piece of land is called.

(A) Subsistence agriculture

(B) Commercial agriculture

(C) Pastoral farming

(D) Mixed croping

17. Proposal for a law is called -

(A) Bill   (B) An act

(C) Ordinance   (D) Constitution

18. Which of the following types of historical source material is official?

(A) Survey reports

(B) Personal letters

(C) Newspaper reports

(D) Folk songs

19. Which of the following were called dikus by the Mundas?

(A) Tribal gods

(B) Moneylenders, officials, traders, middlemen and missionaries

(C) Clearers of forests

(D) Munda territory

20. A country is a _____ if it has an elected head of state.

(A) Republic   (B) Sovereign
(C) Secular   (D) Democratic

21. A sentence given by an Indian court can be reduced by the

(A) Prime minister

(B) Vice-president

(C) President

(D) Central council of ministers

22. Granitic rocks usually produce

(A) Coarse soils   (B) Fine soils

(C) Black soils   (D) None of these

23. Which of the following is not a method of checking soil erosion?

(A) Afforestation

(B) Terracing

(C) Salinisation

(D) Contour ploughing

24. Which of the following is not a type of millet?

(A) Jowar   (B) Bajra

(C) Ragi   (D) Mustard

25. The British prohibited shifting cultivation in reserved forests because they

(A) Wanted to prevent the cutting of trees

(B) Wanted to save wildlife

(C) Wanted the shifting cultivators to settle elsewhere

(D) Wanted to use the trees as sources of timber

26. Which of the following is illegal in India?

(A) Not following any religion

(B) Changing one's religion

(C) Following any religion

(D) None of these

27. In which year the calico act was passed?

(A) 1721   (B) 1723
(C) 1725   (D) 1735

28. Digboi in Assam is noted for it

(A) Coalfields

(B) Goldmines

(C) Oil fields

(D) Diamond mines

29. Which one of the following best describes a Resident with respect to British India

(A) A local money lender collecting revenue

(B) A local landlord to keep a check on the land revenue.

(C) An official which administers oath to the soldiers.

(D) A senior British Government administrative officials positioned in a local place and controlling the happenings of the kingdom.

30. In the late 18th century. Calcutta, Bombay and _____ rose in importance as presidency cities and were the centres of British power :

(A) Madras   (B) Nagpur

(C) Hyderabad   (D) Kanpur

MENTAL ABILITY

1. Sushant introduces Raj as the son of the only brother of his father's wife. How is Raj related to Sushant?

(A) Cousin   (B) Son

(C) Uncle   (D) Son-in-law

2. Showing the man receiving a trophy in a prize distribution. Ramesh said, "He is the brother of my uncle's daughter". Who is the man to Ramesh?

(A) Son   (B) Cousin

(C) Nephew   (D) Uncle

3. In a certain code 'ROAD' is written as 'URDG'. How is 'SWAN' written in that code?

(A) VXDQ   (B) VZDQ

(C) UXDQ   (D) VZCQ

4. If 'air' is called 'water'; 'water' is called 'green'; 'green' is called 'dust'; 'dust' is called 'yellow' and 'yellow' is called 'cloud'; which of the following do the 'fish' live in?

(A) Air   (B) Water

(C) Green   (D) Dust

5. If × means +, ÷ means –, – means × and + means ÷, then 8 × 7 – 8 + 40 ÷ 2 = ?

(A) 1   (B) $7\frac{2}{5}$

(C) $8\frac{3}{5}$ (D) 44

6. In the letter series one term is missing as shown. Choose the missing term out of the options

BF, CH, ..., HO, LT

(A) DN   (B) TV

(C) EK   (D) EM

7. Find out the missing number which will come in place of .... from amongst the four alternatives.

5, 9, 15, 23, 33, 45, ...

(A) 55   (B) 57

(C) 59   (D) 61

8. Find out the missing letters which will come in place of .... from amongst the four alternatives.

.... a b .... a b .... a .... p a b

(A) a a b p   (B) a p a p

(C) p p p b   (D) b b a a

9. In a row of trees, one tree is 11th from either end of the row. How many trees are there in the row?

(A) 22   (B) 23

(C) 21   (D) None of these

10. Which letter represents the set of persons who play all the three games?
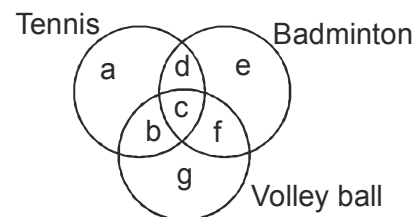
(A) b   (B) c

(C) f   (D) g

11. Find the missing number
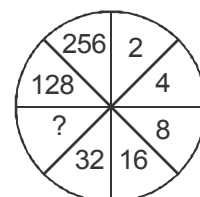
(A) 64   (B) 36

(C) 34   (D) 60

12. Which number is opposite 4 in a standard dice give below?
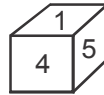
(A) 1   (B) 3

(C) 5   (D) Can't determined

13. A man walks 9 km due East and then 12 km due South. How far is he from the starting point?

(A) 15 km   (B) 6 km

(C) 7 km   (D) None of these
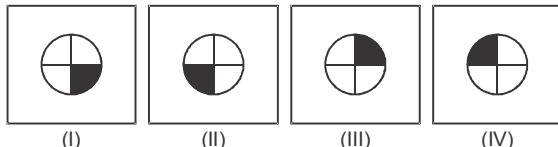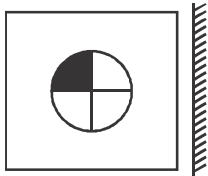
14. Find the missing letters

ZOA, XMF, ?, TIP, RGU, PEZ

(A) YXX   (B) WLL

(C) UKK   (D) VKK

15. If **CRICKETER** is codes as **DQJBLDUDS**, then **PLAYER** will coded as

(A) QMBZFS   (B) OMZZDS

(C) QKBXFQ   (D) QKBZDS

16. Choose the correct mirror image from the given figures.

(A) I   (B) II

(C) III   (D) IV

17. Choose the alternative which is closely resembles the water-image of the given combination.

ACOUSTIC

(A) ∀ɔONSⱢIɔ

(B) ∀ɔONSⱢIɔ

(C) ∀ɔONSⱢIɔ

(D) ∀ɔONSⱢIɔ

18. Find out that answer figure in which the question figure is embedded
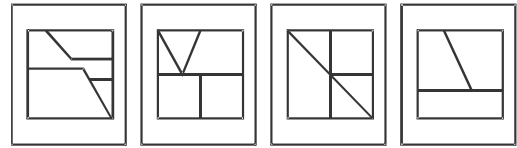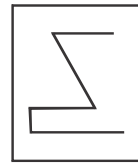
(A) I   (B) II

(C) III   (D) IV

19. Which figure will come in place of ?
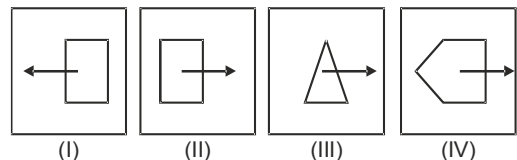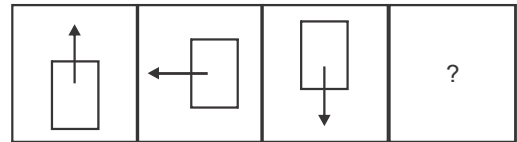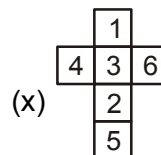

(A) I   (B) II

(C) III   (D) IV

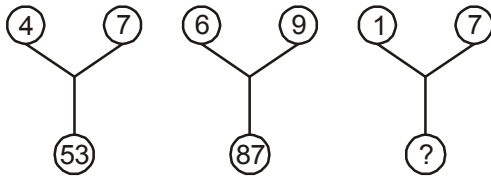**20.** How many triangles in given figure
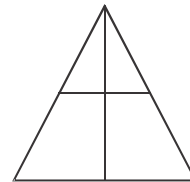
(A) 3   (B) 4

(C) 5   (D) 6

21. The figure (X) given below is the unfolded position of a cubical dice. This unfolded figure is followed by four different figures of dice. You have to select the figure which is identical to the figure (X).
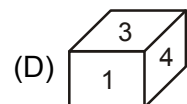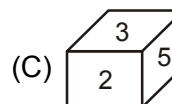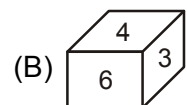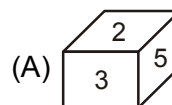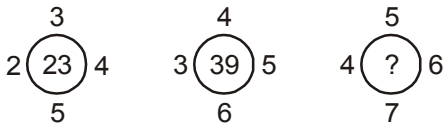
22. Find the missing number(s) :

(A) 49   (B) 50
(C) 48   (D) 55

23. Find the missing number(s) :

(A) 120   (B) 59
(C) 62   (D) 22

24. Pointing to a lady in the photograph, Manish said, "She is the daughter of my grand father's only son."

How is Manish related to that lady?

(A) Father   (B) Uncle
(C) Brother   (D) Nephew

25. In a certain code 'MONKEY' is written as XDJMNL, how is 'TIGER' written in that code?

(A) SHFDQ   (B) QDFHS
(C) SDFHS   (D) QDHJS

26. I went 15 m North and then turned south, covered 5 m and then turned east and covered 10 m. In which direction am I from my house?

(A) East   (B) West
(C) North   (D) None of these

27. If L denotes x, M denotes $\div$, P denotes + and Q denotes –, then 16 P 24 M 8 Q 6 M 2 L 3 = ?

(A) $\dfrac{13}{6}$ (B) $-\dfrac{1}{6}$

(C) $14\dfrac{1}{2}$ (D) 10

28. The numbers follow a series as per some rule. Find out the missing number which will come in place of_____ from amongst the four alternatives.
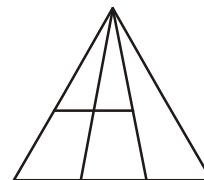
5, 11, 24, 51, 106, _____

(A) 217   (B) 212
(C) 214   (D) 216

29. This question is based on letter series in which some letters are missing. The missing letters are given in a proper sequence as one of the alternatives among the given four alternative.

b —— a b b c —— b b c a —— b c a b b – —— a b

(A) a c a a   (B) a c b a
(C) c a b c   (D) c a c c

30. How many triangles in the following figure.

(A) 8   (B) 9
(C) 6   (D) 5

SAMPLE QUESTIONS FOR IX TO X MOVING

PHYSICS

1. Audible Range to Human ear is

(A) 0 Hz – 10 Hz   (B) 0 Hz – 10 kHz

(C) 0 Hz – 20 Hz   (D) 20 Hz – 20 KHz

2. What do you mean by Tension force.

(A) force in spring

(B) force in string

(C) force due to rolling

(D) attractive force

3. A body of mass 2 kg thrown upward with initial velocity 19.6 m/s. After 2 sec, its velocity will be

(A) 9.8 m/s.   (B) 6 m/s

(C) 4.8 m/s   (D) 0

4. A body is falling from a height of 10 m. Its acceleration will be

(A) 10 m/s^2 (B) 9.8 m/s^2

(C) 9 m/s^2 (D) 0 m/s^2

5. Earth is revolving around sun due to

(A) Circular force

(B) Centripetal force

(C) Frictional force

(D) Normal reaction force

6. When a body falls freely from a certain height

(A) its acceleration increases.

(B) its velocity increases.

(C) its weight increases

(D) Its temperature increase

7. A boy plays a musical note on a piano. Next he plays another note of higher pitch to make it louder. Which of the following is true of the second sound when compared with the first?

	Frequency of second sound	Amplitude of second sound
(A)	Smaller	Smaller
(B)	Smaller	Larger
(C)	Larger	Larger
(D)	Larger	Smaller

8. Newton's law of gravitation is applicable to–

(A) bodies on the earth only

(B) planets only

(C) bodies in the solar system only

(D) all bodies of the universe

9. When a net force acts on an object, the object will be accelerated in the direction of the force with an acceleration proportional to the:

(A) velocity of the object

(B) force on the object

(C) inertia of the object

(D) mass of the object

10. A body is released from rest from top of a tower of height 3H. The ratio of times it takes to fall through equal height H is :

(A) $1 : \left(\sqrt{2} - 1\right) : \left(\sqrt{3} - \sqrt{2}\right)$

(B) $1 : \left(\sqrt{2} - 1\right) : \left(\sqrt{3} + \sqrt{2}\right)$

(C) 1 : 1 : 1

(D) 9 : 4 : 1

11. A body is moving with constant acceleration from A to B in a straight line. C is the mid-point of AB. If u and v are the speeds at A and B respectively. The speed of C is :

(A) $\dfrac{u + v}{2}$ (B) $\dfrac{v - u}{2}$

(C) $\sqrt{\dfrac{u^2 + v^2}{2}}$ (D) $\sqrt{\dfrac{v^2 - u^2}{2}}$

12. If a force is conservative :

(A) Work is path independent

(B) Work is path dependent

(C) Potential energy remains constant

(D) None of these

13. A spring balance A reads 2 kg with a block of mass m suspended from it. Another balance B reads 3 kg when a beaker with a liquid is put on its pan. The two balances are now so arranged that the hanging mass m is fully immersed inside the liquid in the beaker as shown in the figure. In this situation.
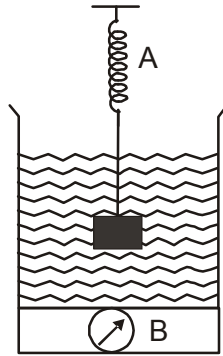
(A) the balance A will read 2 kg and B will read 5 kg.

(B) the balance A will read 2 kg and B will read 3 kg.

(C) the balance A will read less than 2 kg and B will read between 3 kg and 5 kg.

(D) the balance A will read less than 2 kg and B will read 3 kg.

14. Four blocks are kept in a row on a smooth horizontal table with their centres of mass collinear as shown in the figure. An external force of 60 N is applied from left on the 7 kg block to push all of them along the table. The forces exerted by them are:

(A) 32 N by P on Q

(B) 28 N by Q on P

(C) 22 N by Q on R

(D) 14 N by S on R

15. Which of the following statements corresponds to Kepler's laws of planetary motion?

(A) A planet moves around the sun in a circular orbit.

(B) A planet moves around the sun in an elliptical orbit with the sun at the geometrical centre.

(C) A planet moves around the sun in an elliptical orbit with the sun at the focus

(D) A planet moves around the sun in an elliptical orbit with uniform speed.

16. A pump can lift water of 150 kg in 15 s, to store it in an overhead tank at a height of 15 m. Find the power of the pump. (g = 9.8 m s^{-2})

(A) 1070 W   (B) 1270 W

(C) 1470 W   (D) 1570 W

17. When an object undergoes acceleration:

(A) its speed always increases

(B) its velocity always increases

(C) it always falls towards the Earth

(D) a net non-zero force always acts on it

18. Observe the given distance-time graph.
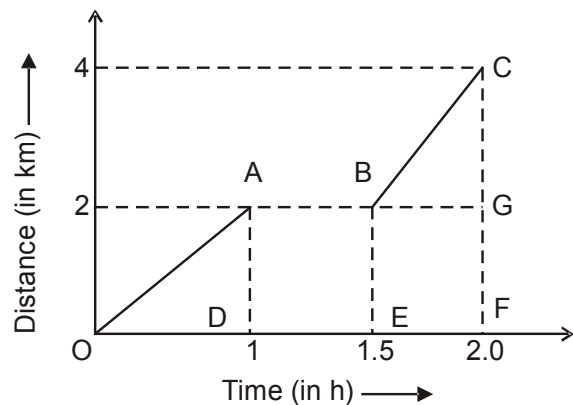
Identify the respective speeds of the body when it moves from O to A and B to C.

(A) 2 km h^{-1}, 4 km h^{-1}

(B) 1 km h^{-1}, 3 km h^{-1}

(C) 3 km h^{-1}, 4 km h^{-1}

(D) 4 km h^{-1}, 6 km h^{-1}

19. A horse while running at a constant velocity of 15 ms^{-1}, develop a momentum of 300 Ns. The mass of horse is :

(A) 18 kg   (B) 30 kg

(C) 20 kg   (D) 25 kg

20. The momentum 'P' and kinetic energy 'E' of a body of mass 'm' are related as

(A) $P = \sqrt{2mE}$ (B) $P = \frac{1}{2}mE$

(C) $P = \frac{2m}{E}$ (D) $P = 2mE$

21. A body having a mass 100 gram is allowed to fall freely from a height 1000m under the action of gravity. Its kinetic energy after 10 seconds is (take g = 1000 cm / sec^2)

(A) 5 joules   (B) 50 joules

(B) 500 joules   (D) 5000 joules

22. The weight of a body at the centre of the earth is–

(A) zero

(B) infinite

(C) same as at the other places

(D) equal to that at the surface of the earth

23. The rate of change in momentum of a body is

(A) Equal to the force applied on it

(B) Proportional to the force applied on it

(C) In the direction of applied force

(D) All of the above are true

24. An engine develops 10 kW power. How much time will it take to lift a mass of 200 kg to a height of 40m? (take g = 10 m s^{-2})

(A) 10s   (B) 20s

(C) 7s   (D) 8s

25. The relation between g and G is–

(A) $g = \dfrac{GM}{R}$ (B) $g = \dfrac{GM}{R^2}$

(C) $g = GMR^2$ (D) $g = \dfrac{G}{MR^2}$

26. A ball is thrown upward from a point P, reaches to the highest point Q :

(A) Kinetic energy at P is equal to kinetic energy at Q

(B) Potential energy at P is equal to kinetic energy at Q

(C) Kinetic energy at P is equal to potential energy at Q

(D) Potential energy at P is equal to potential energy at Q

27. A string is used to pull a block of mass m vertically up by a distance h at a constant acceleration $\dfrac{g}{3}$. The work done by the tension in the string is

(A) $\dfrac{2}{3}$ mgh   (B) $\dfrac{-mgh}{3}$

(C) mgh   (D) $\dfrac{4}{3}$ mgh

28. If 250 J of work is done in sliding a 5 kg block up an inclined plane of height 4 m. Work done against friction is (g = 10 ms^{-2})

(A) 50 J   (B) 100 J

(C) 200 J   (D) Zero

29. A man carries a load on his Head through a distance of 5 m. The maximum amount of work is done when he

(A) Moves it over an inclined plane

(B) Moves it over a horizontal surface

(C) Lifts it vertically upwards

(D) None of these

30. Work done by frictional force

(A) Is always negative

(B) Is always positive

(C) Is zero

(D) May be positive, negative or zero

CHEMISTRY

1. Which one of the following statements is not correct about the three states of matter?

   (A) Molecules of a solids posses least energy whereas those of a gas possess highest energy

   (B) The density of solid is highest whereas that of gases is lowest

   (C) Gases like liquids possess definite volumes

   (D) Molecules of a solids possess vibratory motion

2. Kinetic energy of molecules is highest in –

   (A) Gases   (B) Solids

   (C) Liquids   (D) Solutions

3. Diffusion mainly occurs in –

   (A) Solid   (B) Liquid

   (C) Gas   (D) All of these

4. Which of the following statements is/ are correct?

   (A) Intermolecular forces of attraction in solids are maximum.

   (B) Intermolecular forces of attraction in gases are minimum.

   (C) Intermolecular spaces in solids are minimum.

   (D) All of the above

5. Which of the following is not correct for gases?

   (A) Gases have definite mass.

   (B) Gases have definite shape.

   (C) Gases have definite volume.

   (D) Both (B) and (C)

6. Which of the following is/are application(s) of high compressibility of gases?

   (A) L.P.G. is used as fuel in homes for cooking food

   (B) Oxygen cylinders are supplied to hospitals.

   (C) C.N.G. is used as fuel in vehicles.

   (D) All of these

7. Which of the following statements does not go with the liquid state?

   (A) Particles are loosely packed in the liquid state.

   (B) Fluidity is the maximum in the liquid state.

   (C) Liquids can be compressed.

   (D) Liquids take up the shape of that container in which these are placed.

8. When more solute is dissolved in water then its boiling point will -

   (A) Increase   (B) decrease

   (C) remain same   (D) can't say

9. Why excess of salt is added to the ice accumulated on the street after a heavy snowfall in the cold countries?

   (A) To melt the ice

   (B) To decrease the freezing point of water

   (C) Both A & B

   (D) None of these

10. What is the value of 0 K on celsius scale?

    (A) $0^\circ C$ (B) $273.15^\circ C$

    (C) $-273.15^\circ C$ (D) $-173.15^\circ C$

11. The substance which can readily sublime is

    (A) Ammonium chloride

    (B) Sodium chloride

    (C) Hydrochloric acid

    (D) chlorine gas

12. The boiling point of pure water at sea level is $100^\circ C$. The boiling point of water at a hill station about 1500 m above will be -

    (A) $> 100^\circ C$ (B) $< 100^\circ C$

    (C) $= 100^\circ C$ (D) can not say

13. Which one of the following is not a metalloid?

    (A) Boron   (B) Silicon

    (C) Gallium   (D) Germanium

14. The elements which normally exist in the liquid state are :

(A) Bromine and iodine

(B) Mercury and chlorine

(C) Iodine and mercury

(D) Bromine and mercury

15. Which of the following are homogeneous in nature?

(i) ice   (ii) wood

(iii) soil   (iv) air

(A) (i) and (iii)   (B) (ii) and (iv)

(C) (i) and (iv)   (D) (iii) and (iv)

16. Which one of the following is most likely to exhibit Tyndall effect ?

(A) Sugar and water mixture

(B) Potash alum and water mixture

(C) Chalk powder and water mixture

(D) Potassium permanganate and water mixture

17. Milk of magnesia is :

(A) A colloid

(B) A true solution

(C) A homogeneous mixture

(D) A suspension

18. Which of the following can be called a suspension?

(A) Milk

(B) Milk of magnesia

(C) Salt solution

(D) Vinegar

19. One of the following represents the solution of solid in a solid. This one is :

(A) Boron   (B) Brass

(C) Beryllium   (D) Bread

20. The value of the Avogadro constant is–

(A) 6.022×10^{24} (B) 6.022×10^{22}

(C) 60.22×10^{23} (D) 6.022×10^{23}

21. The atomic mass of sodium is 23. the number of moles in 46 g of sodium is–

(A) 1   (B) 2

(C) 2.3   (D) 4.6

22. The reference standard taken for defining atomic mass unit is –

(A) H   (B) C-12

(C) C-13   (D) C-14

23. The element whose gram atomic mass and gram molecular mass is same, is–

(A) Oxygen   (B) Hydrogen

(C) Nitrogen   (D) Helium

24. 1 mole of H_2O_2 has gram molecular mass equal to –

(A) 32   (B) 33

(C) 34   (D) 30

25. Which of the following is a correct combination?

(A) Aluminium sulphate : $Al_2(SO_4)_3$

(B) Calcium carbonate : $Ca(CO_3)_2$

(C) Silver sulphide : AgS

(D) Barium Carbonate : $Ba(CO_3)_2$

26. Which of the following represents a polyatomic ion ?

(A) Sulphide   (B) Chloride

(C) Sulphate   (D) Nitride

27. The formula of the sulphate of an element X is $X_2(SO_4)_3$. The formula of nitride of element X will be:

(A) X_2N (B) XN_2

(C) XN   (D) X_2N_3

28. If 32 g of sulphur has x atoms, then the number of atoms in 32 g of oxygen will be :

(A) $\dfrac{x}{2}$ (B) 2x

(C) x   (D) 4x

29. Rutherford's alpha particle scattering experiment led to the discovery of :

(A) Nucleus   (B) Electrons

(C) Protons   (D) Neutrons

30. Which of the following is the correct electronic configuration of sodium?

(A) 2, 8, 1   (B) 8, 2, 1

(C) 2, 1, 8   (D) 2, 8, 2

BIOLOGY

1. Term 'Cell' is come from
   (A) latin word   (B) Greek word
   (C) Indian word   (D) British word

2. "Omnis cellula e cellula" term Given by-
   (A) R. Virchow (1855)
   (B) R. Virchaw (1665)
   (C) Purkinje (1855)
   (D) Robert Brown (1665)

3. Which cell have variable shape-
   (A) Amoeba   (B) WBC
   (C) Plant cell   (D) Both A & B

4. Size of Eukanyotic cell-
   (A) 10 - 100 μm   (B) 1 - 10 μm
   (C) 0.5 μm   (D) 1 - 10.5 μm

5. Robert hooke published a book-
   (A) origin fo species (B) Cellula
   (C) system nature   (D) Micrographia

6. All types of cell Have -
   (A) chloroplast   (B) Plasma membrane
   (C) Cell wall   (D) Vacuole.

7. Plasmolysis occurs due to
   (A) absorption   (B) endosmosis
   (C) osmosis   (D) exosmosis

8. Cell wall of plant cells is chiefly composed of
   (A) hemicellulose (B) cellulose
   (C) phospholipids (D) proteins

9. Aleuroplasts in a cell store
   (A) starch   (B) oil
   (C) protein   (D) nutrients

10. The only cell organelle seen in prokaryotic cell
    (A) mitochondria (B) ribosomes
    (C) plastids   (D) lysosomes

11. Meristematic tissues in plants are
    (A) Growing in volume
    (B) Localised and permanent
    (C) Localised and dividing cells
    (D) Not limited in certain regions

12. Find out incorrect sentence
    (A) Parenchymatous tissues have inter-cellular spaces
    (B) Collenchymatous tissues are irregularly thickened at corners
    (C) Apical and intercalary meristems are permanent tissues
    (D) Meristematic tissues, in its early stage, lack vacuoles

13. Parenchyma cells are
    (A) Relatively unspecified and thin walled
    (B) Lignified
    (C) Thick- walled and specialised
    (D) None of these

14. The dead elements present in the phloem is
    (A) Companion cells   (B) Phloem fibres
    (C) Phloem parenchyma
    (D) Sieve tube cells

15. Cell organelle which differentiates plant cell from animal cell
    (A) Cell membrane   (B) Plastids
    (C) Nucleolus   (D) Vacuoles

16. Girth of stem increases due to
    (A) Apical meristem
    (B) Lateral meristem
    (C) Intercalary meristem
    (D) Vertical meristem

17. Find out incorrect sentence
    (A) Parenchymatous tissues have inter-cellular spaces
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    (C) Apical and intercalary meristems are permanent tissues
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18. The dead elements present in the phloem is
    (A) Companion cells
    (B) Phloem fibres
    (C) Phloem parenchyma
    (D) Sieve tube cells

19. If the tip of sugarcane plant is removed from the field, even then it keeps on growing in length. It is due to the presence of

(A) Cambium

(B) Apical meristem

(C) Lateral meristem

(D) Intercalary meristem

20. Which of the following does not lose their nucleus at maturity?

(A) Vessel

(B) Companion cells

(C) Red blood cells

(D) Sieve tube cells

21. Basic taxonomic category is

(A) population   (B) Spices

(C) Variety   (D) breed

22. Who has proposed two kigdom classification?

(A) R. Whittaker   (B) Carolus Linnaeus

(C) Schimper   (D) Eichler

23. Which taxonomic term may be substituted for any rank in the classification?

(A) Class   (B) Genus

(C) Species   (D) Taxon

24. In Whittaker's classification, unicellular organisms are grouped under

(A) Protista   (B) Porifera

(C) Fungi   (D) Protozoa

25. The body of organisms has chitinous cell wall and is made up of hyphae and mycelium

(A) Spirogyra   (B) Rhizopus

(C) Funaria   (D) Riccia

26. Naked seeds are present in

(A) Pinus   (B) Mango

(C) Mustard   (D) Lemon

27. The excretory organs of Annelida are

(A) Nephridia

(B) Statocysts

(C) Archeocytes

(D) None of the above

28. Find the incorrect pair

(A) Leech - phylum Annelida

(B) Octopus - Phylum Mollusca

(C) Fasciola - phylum Platyhelminthes

(D) Starfish - Phylum Chordata

29. Jaundice is disease of -

(A) Kidney   (B) Liver

(C) Pancreas   (D) Duodenum

30. Immuno–deficiency syndrome could develop due to -

(A) Defective liver

(B) Defective thymus

(C) AIDS Virus

(D) Weak immune system.

MATHEMATICS

1. The value of $0.\overline{23} + 0.\overline{22}$ is

(A) $0.\overline{45}$ (B) $0.\overline{43}$

(C) $0.4\overline{5}$ (D) 0.45

2. Which one of the following is a correct statement?

(A) Decimal expansion of a rational number is terminating

(B) Decimal expansion of a rational number is non-terminating

(C) Decimal expansion of an irrational number is terminating.

(D) Decimal expansion of an irrational number is non-terminating and non-repeating.

3. If $\dfrac{9^n \times 3^5 \times (27)^3}{3 \times (81)^4} = 27$, then n equals–

(A) 0   (B) 2

(C) 3   (D) 4

4. If $\sqrt{\dfrac{x}{y}} + \sqrt{\dfrac{y}{x}} = \dfrac{10}{3}$ and x+y=10, then the value of xy will be :

(A) 16   (B) 9

(C) 2   (D) 10

5. Evaluate :

$$\dfrac{(a-b)^2}{(b-c)(c-a)} + \dfrac{(b-c)^2}{(a-b)(c-a)} + \dfrac{(c-a)^2}{(a-b)(b-c)}$$

(A) 0   (B) 1

(C) 2   (D) 3

6. If x + y = 5 and xy = 6, the value of $(x^3 + y^3)$ is -

(A) 91   (B) 133

(C) 35   (D) 343

7. When $x^{13} + 1$ is divided by x + 1, the remainder is -

(A) –1   (B) 0

(C) 1   (D) 2

8. The polynomial $11a^2 - 12\sqrt{2}\,a + 2$ on factorization gives

(A) $\left(11a + \sqrt{2}\right)\left(a - \sqrt{2}\right)$

(B) $\left(a - \sqrt{2}\right)\left(11a - \sqrt{2}\right)$

(C) $\left(a + 11\right)\left(a + \sqrt{2}\right)$

(D) $\left(11a - \sqrt{2}\right)\left(a + \sqrt{2}\right)$

9. The surd $\dfrac{12}{3 + \sqrt{5} + 2\sqrt{2}}$, after rationalizing the denominator becomes

(A) $\sqrt{5} - \sqrt{2} + \sqrt{10} + 1$

(B) $\sqrt{5} + \sqrt{10} - \sqrt{2} + 1$

(C) $\sqrt{10} + \sqrt{2} + \sqrt{5} + 1$

(D) $\sqrt{5} - \sqrt{10} - \sqrt{2} - 1$

10. If (x + 2) and (x – 1) are the factors of $(x^3 + 10x^2 + mx + n)$, the values of m and n are -

(A) m = 5, n = – 3

(B) m = 17, n = – 8

(C) m = 7, n = –18

(D) m = 23, n = – 19

11. In the figure shown AB is parallel to DE. The difference between angles x and y is:

(A) 0º   (B) 4º

(C) 10º   (D) 12º
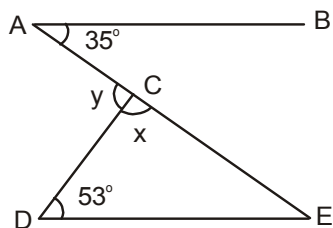
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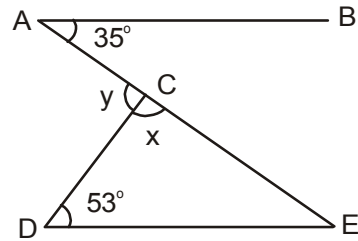
13. If the angles A, B, C and D of a quadrilateral ABCD in the same order are in the ratio 3:7:6:4, then ABCD is a
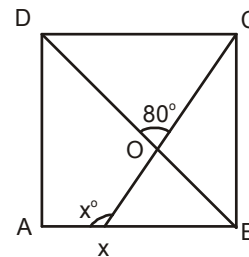
(A) Parallelogram   (B) rhombus
(C) trapezium   (D) kite

14. In the given figure $\overline{AD}$ and $\overline{BE}$ intersect at C such that BC = CE, $\angle ABC = 40°$ and $\angle DEC = 85°$. Find $\angle BAC - \angle CDE$.

(A) 45º   (B) 125º
(C) 55º   (D) 110º
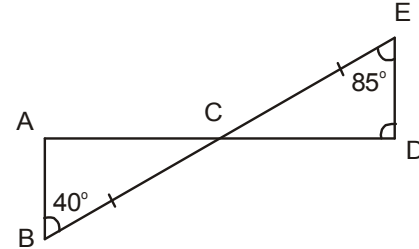
15. In the adjoining figure, ABCD is a square. A line segment CX cuts AB at X and the diagonal BD at O such that and then the value of x is :

(A) 125°   (B) 120°

(C) 130°   (D) 140°

**16.** If α, β be the zeroes of the polynomials $2x^2 + 5x + k$ such that $\alpha^2 + \beta^2 + \alpha\beta = \dfrac{21}{4}$, then K = ?

(A) 3   (B) -3
(C) -2   (D) 2

17. If amongst two supplementary angles, the measure of smaller angle is four times its complement, then their difference is

(A) $30°$ (B) $36°$

(C) $43°$ (D) $45°$

18. If an angle of a regular polygon is $165°$, then the number of sides of the polygon is

(A) 30   (B) 24

(C) 18   (D) 15

19. All the three sides of a $\triangle ABC$ have lengths in integral units, with AB = 2001 units and BC = 1002 units. The possible number of triangles with this condition is:

(A) 2001   (B) 2002

(C) 2003   (D) 2004

20. The figure formed by joining the mid-points of the adjacent sides of a rhombus is a

(A) Square

(B) Rectangle

(C) Trapezium

(D) None of these

21. If one angle of a parallelogram is $24°$ less than twice the smallest angle, then the measure of the largest angle of the parallelogram is

(A) $176°$ (B) $68°$

(C) $112°$ (D) $102°$

22. If AD is median of $\triangle ABC$ and P is a point on AC such that ar $(\triangle ADP)$: ar $(\triangle ABD) = 2:3$, then ar $(\triangle PDC)$: ar $(\triangle ABC)$ is

(A) 1 : 5   (B) 2 : 5

(C) 1 : 6   (D) 3 : 5

23. The coordinates of the point lying on the negative side of x-axis at a distance of 5 units from origin are

(A) (0, 5)   (B) (0, –5)

(C) (–5, 0)   (D) (5, 0)

24. In the given figure, measure of <QPR is

(A) 10.5^0 (B) 42^0 C
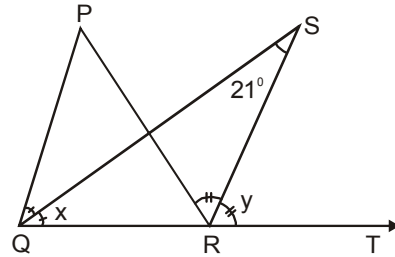
(C) 111^0 (D) 50^0

25. In the figure shown, chord ED is parallel to diameter AC of a circle. If $\angle CBE = 60°$, then $\angle DEC$ must be :
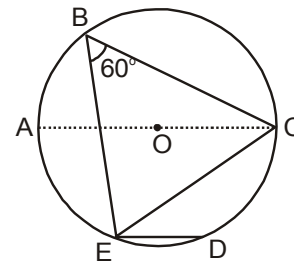
(A) $15°$ (B) $30°$

(C) $10°$ (D) $20°$

26. The height h of a cylinder equals the circumference of the cylinder. In terms of h, what is the volume of the cylinder?

(A) $\dfrac{h^3}{4\pi}$ (B) $\dfrac{h^2}{2\pi}$ (C) $\dfrac{h^3}{2}$ (D) πh^3

27. If a sphere is inscribed in a cube, then the ratio of the volume of the sphere to the volume of the cube is

(A) $\pi : 2$ (B) $\pi : 3$

(C) $\pi : 4$ (D) $\pi : 6$

28. The mode of the distribution 3,5,7,4,2,1,4,3,4 is

(A) 7   (B) 4   (C) 3   (D) 1

29. In a triangle ABC, BC = 5 cm, AC = 12 cm and AB = 13 cm. The length of the altitude drawn from B on AC is:

(A) 4 cm   (B) 5 cm

(C) 2 cm   (D) 7 cm

30. A card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is a spade or a king ?

(A) $\dfrac{4}{13}$ (B) $\dfrac{3}{13}$

(C) $\dfrac{2}{13}$ (D) $\dfrac{1}{13}$

SOCIAL SCIENCE

1. The southernmost tip of the Indian union and the main land -
   (A) Indira Point   (B) Delhi
   (C) Chennai   (D) All the above

2. Match the following:

State	Neighbouring Country
A. Uttaranchal	i. Myanmar
B. Rajasthan	ii. Pakistan
C. Meghalaya	iii. China
D. Nagaland	iv. Bangladesh

   (A) A-iv, B-iii, C-ii, D-i
   (B) A-iii, B-ii, C-iv, D-i
   (C) A-i, B-iii, C-ii, D-iv
   (D) A-ii, B-iv, C-i, D-ii

3. Poverty eradication programmes launched by the Government of India aim at_____.
   (A) Eradicating poverty in rural areas
   (B) Eradicating poverty in urban areas
   (C) Eradicating unemployment
   (D) Increasing literacy rate

4. Out of the following statements which one is not right about $82°30'E$ longitude
   (A) This is standard meridian of India
   (B) The local time of this meridian is 5:30 hours ahead of greenwich
   (C) The meridian passes through Andhra Pradesh
   (D) The meridian divides India into two equal parts

5. The Prime Minister Rozgar Yojana aims at_____.
   (A) Self-employment
   (B) Rural housing
   (C) Urban housing
   (D) Health and sanitation

6. Who among the following reintroduced slavery in France after it was abolished by Jacobin regime?
   (A) Louis XIV   (B) Robespierre
   (C) Napoleon   (D) Marat

7. There are 40 villages in a district where the government has made no provision for drinking water. These villagers met and considered many methods of forcing the government to responds to their need. Which of these is not a democratic method?
   (A) Filing a case in the courts claiming that water is part of right to life.
   (B) Boycotting the next elections to give a message to all parties.
   (C) Organising public meetings against governments policies.
   (D) Paying money to government officials to get water.

8. Which of the following statements about the reasons for conducting elections are false?
   (A) Elections enable people to judge the performance of the government
   (B) People elect the representatives of their choice in an election
   (C) Elections enable people to evaluate the performance of the judiciary
   (D) Elections enable people to indicate which policies they prefer

9. The wind blowing in the northern plains in summers in known as:
   (A) Kaal Baisakhi
   (B) Loo
   (C) Trade winds
   (D) None of the above

10. Which of the following decisions was taken by the convention ?
    (A) Declared France a constitutional monarchy
    (B) Abolished the monarchy
    (C) All men and women above 21 years got the right to vote
    (D) Declared France a Republic

11. Multiple Cropping refers to :

(A) cultivation of wheat and rice

(B) cultivation of two crops in alternate rows

(C) cultivating more than one crop on the same field each year

(D) cultivating crops and rearing animals on the same farm

12. 'Two Treatises of Government' was written by:

(A) Rousseau   (B) John Locke

(C) Montesquieu   (D) None of these

13. Passive Citizens of France were :

(A) Only men above 25 years

(B) Only propertied men

(C) Men and women who didn't vote

(D) Only propertied women

14. Mountain ranges in the eastern part of India, forming its boundary with Myanmar are collectivity called :

(A) Himachal Pradesh

(B) Uttrakhand

(C) Purvanchal

(D) Himalayas

15. Cash in hand is a component of :

(A) physical capital

(B) working capital

(C) fixed capital

(D) both (A) and (B)

16. What was the national Anthem of France ?

(A) Marseillaise

(B) Jan-Gan man

(C) Guillotine

(D) None of these

17. Russian peasants pooled their land together periodically and their commune was known as the

(A) 'budeonovka'   (B) 'kolkhoz'

(C) 'kulaks'   (D) 'mir'

18. Lenin mentioned his three demands "war be brought to a close, land be transferred to the peasants, and banks be nationalised" in his writing

(A) 'April Theses'

(B) 'Imperialism, the Highest Stage of Capitalism'.

(C) 'The State and the Revolution'

(D) 'What is to be done?'

19. Machines are called fixed capital

(A) because it can be used in production for many years.

(B) because without machines production is not possible.

(C) because machines are made by human beings.

(D) because machines are not the working capital.

20. Who wanted Russian Society which tolerated all religions?

(A) Liberals   (B) Radicals

(C) Conservatives   (D) Democrats

21. Who refuted the doctrine of the divide and absolute right of the monarch?

(A) John Locke   (B) Rousseau

(C) Montesquieu   (D) None of these

22. What does broken chain stand for during French Revolution?

(A) Freedom from slavery

(B) Freedom from monarchy

(C) Revolution

(D) socialism

23. In which of the following state is the Simlipal bio-reserve located?

(A) Punjab   (B) Delhi

(C) Odisha   (D) West Bengal

24. Who were called Kulkas?

(A) Well to do farmers of Russia

(B) Well to do farmers of France

(C) Well to do farmers of India (Palampur)

(D) None of these

25. What type of economic activity is quarrying?

(A) Primary   (B) Secondary

(C) Tertiary   (D) None of these

26. Investment in human resource can be implemented through :

(A) Food and good living

(B) Food and health

(C) Education and health

(D) Technological advancement

27. Trade, transport, communication, banking, education, health, tourism, etc., are activities included in the :

(A) Primary sector

(B) Secondary sector

(C) Tertiary sector

(D) State sector

28. Who among the following is known as the child of the 'French Revolution'?

(A) Napoleon Bonaparte

(B) Louis XVI

(C) Voltaire

(D) Rousseau

29. German children had to join Jungvolk at the age of

(A) 5   (B) 10

(C) 15   (D) 20

30. Which term is used for virgin vegetation, which have come from outside India are termed as exotic plants.

(A) Indigenous plants

(B) Endemic species

(C) Exotic Plants

(D) None of these

MENTAL ABILITY

1. Sushant introduces Raj as the son of the only brother of his father's wife. How is Raj related to Sushant?

(A) Cousin   (B) Son

(C) Uncle   (D) Son-in-law

2. **Direction**

(i) A + B means A 'is the daughter of ' B

(ii) A – B means A 'is the husband of ' B

(iii) A × B means A 'is the brother of ' B :

then, If P × Q + R, which of the following is true?

(A) P is the brother of R

(B) P is the uncle of R

(C) P is the son of R

(D) P is the father of R

3. In a certain code 'CLOCK' is written as 'KCOLC'. How is 'STEPS' written in that code?

(A) SPEST   (B) SPSET

(C) SEPTS   (D) SPETS

4. If 'air' is called 'water'; 'water' is called 'green'; 'green' is called 'dust'; 'dust' is called 'yellow' and 'yellow' is called 'cloud'; which of the following do the 'fish' live in?

(A) Air   (B) Water

(C) Green   (D) Yellow

5. If × means +, ÷ means –, – means × and + means ÷, then 8 × 7 – 8 + 40 ÷ 2 = ?

(A) 1   (B) $7\dfrac{2}{5}$

(C) $8\dfrac{3}{5}$ (D) 44

6. Choose the missing term from the given options

KM5, IP8, GS11, EV14, ...

(A) BX17   (B) BY17

(C) CY18   (D) CY17

7. Find out the missing number which will come in place of .... from amongst the four alternatives.

5, 9, 15, 23, 33, 45, ...

(A) 55   (B) 57

(C) 59   (D) 61

8. Find the next number in the following sequence

2, 3, 5, 7, 11, ...

(A) 13   (B) 15

(C) 12   (D) None of these

9. Find out the missing letters which will come in place of .... from amongst the four alternatives.

.... a b .... a b .... a .... p a b

(A) a a b p   (B) a p a p

(C) p p p b   (D) b b a a

10. John ranked 21st in a class of fifty one students. What is his rank from the end?

(A) 30th   (B) 32nd

(C) 20th   (D) 31st

11. Kapil ranked thirteen from the top and twenty six from the bottom among those who have passed in the annual examination in a class, If six students have failed in the annual examination, how many students appeared?

(A) 45   (B) 38

(C) 44   (D) 50

12. Which letter represents the set of persons who play Tennis and Volley ball but not Badminton
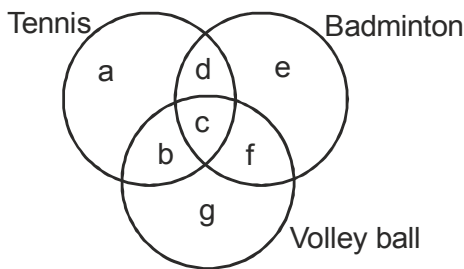
(A) g   (B) e

(C) c   (D) b

13. Find the missing term

B	C	?
O	Q	S
M	N	R

(A) A   (B) D

(C) G   (D) P

14. Find the missing number
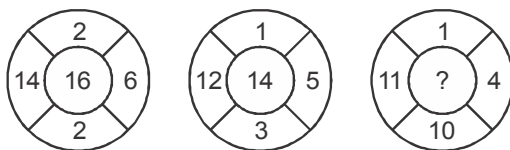
(A) 0   (B) 5

(C) 10   (D) 15

15. The figures given below show the two different positions of a dice. Which number will appear opposite to number 2?
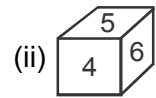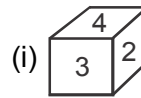
(A) 3   (B) 4

(C) 5   (D) 6

16. Amit walks 2 km South, turned right and walked 1 km, again turned North and walked 5 km, turned East and walked 5 km. How far is he from the starting point?
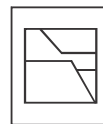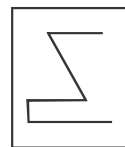
(A) 3 km   (B) 7 km

(C) 5 km   (D) 6 km

17. Find the missing letters

ZOA, XMF, ?, TIP, RGU, PEZ

(A) YXX   (B) WLL
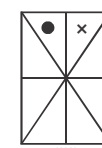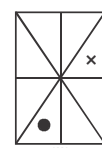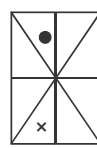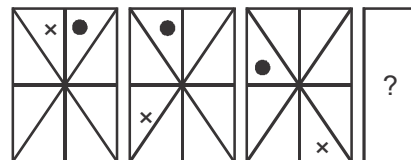
(C) UKK   (D) VKK

18. Find out that answer figure in which the question figure is embedded
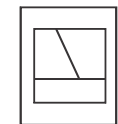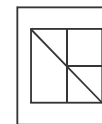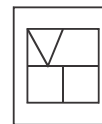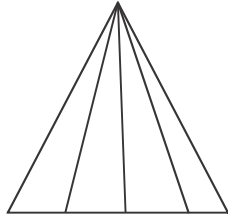

(A) I   (B) II

(C) III   (D) IV

19. Which figure will come in place of ?
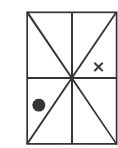
(A) I   (B) II

(C) III   (D) IV

20. How many triangles in given figure
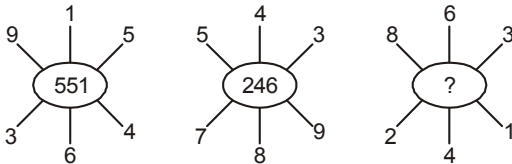

(A) 7   (B) 8

(C) 9   (D) 10

21. In a certain code, **256** means **you are good**, **637** means **we are bad** and **358** means **good and bad**. Which of the following does represent **and** in that code?

(A) 2   (B) 5

(C) 8   (D) 3

22. Find the missing number(s) :

(A) 262   (B) 622

(C) 631   (D) 226

23. Find the missing number(s) :

1	5	9
4	8	12
7	?	15

(A) 11   (B) 12

(C) 13   (D) 16

24. Kishan walks 10 km towards North. From there, he walks 6 km towards South. Then, he walks 3 km towards East. How far and in which direction is he with reference to his starting point?
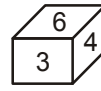
(A) 5 km, North

(B) 5 km, North-East

(C) 7 km, East

(D) 7 km, West

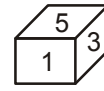**25.** Find the missing letters :

A3P, C5N, E8K, G12G, ?

(A) I15D   (B) I17B

(C) I17D   (D) J16B

26. On the basis of two figures of dice, you have to tell what number will be on the opposite face of number 5?

(A) 1   (B) 2

(C) 4   (D) 6

27. The numbers follow a series as per some rule. find out the missing number which will come in place of _____ from amongst the four alternatives.

7, 15, 33, 71,___

(A) 147   (B) 148

(C) 149   (D) 151

28. Choose the missing term from the given options.

AKU, FPZ,____, PZJ, UEO, ZJT

(A) KUE   (B) JTD

(C) JUE   (D) KVE

29. In a queue, Amrita is 10th from the front while Mukul is 25th from behind and Mamta is just in the middle of the two. If there be 50 persons in the queue, what position does Mamta occupy from the front?

(A) 20th   (B) 19th

(C) 18th   (D) 17th

30. If × means 'addition', – means 'division', ÷ means 'subtraction' and + means 'multiplication', then which of the following equations is correct?
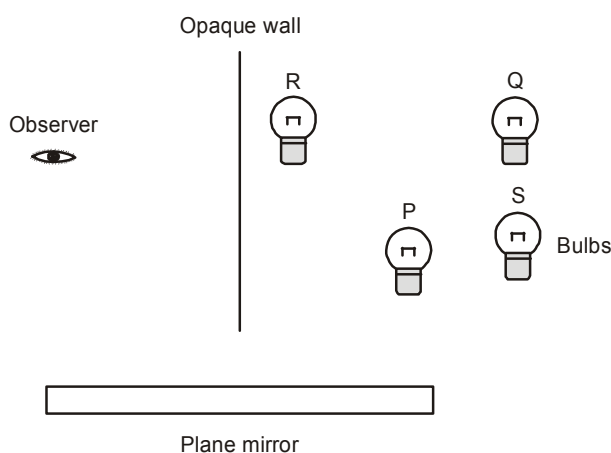
(A) $16 \times 5 \div 10 + 4 = 19$

(B) $16 + 5 \div 10 \times 4 - 3 = 9$

(C) $16 + 5 - 10 \times 4 \div 3 = 9$

(D) $16 - 5 \times 10 \div 4 + 3 = 12$
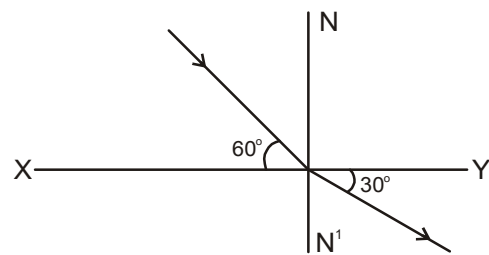
SAMPLE QUESTIONS FOR X TO XI MOVING

PHYSICS

1. What is the angle of deviation?

(A) Angle between the reflected ray and incident ray

(B) Angle between the reflected ray and refracted ray.

(C) Angle between the incident ray and emergent ray

(D) Angle between the incident ray and refracted ray

2. If 'I' is the current through a wire and e is the charge of electron, then the number of electrons in t second will be given by :

(A) $\dfrac{Ie}{t}$ (B) Ite

(C) $\dfrac{e}{It}$ (D) $\dfrac{It}{e}$

3. A metallic sphere is charged negatively, its mass will :

(A) Increase (B) Decrease

(C) Remains same (D) None of these

4. Observe the given figure

Opaque wall
R Q
Observer
P S
Bulbs
Plane mirror

How many bulbs can the observer see from the mirror without changing the position of his eye and bulbs?

(A) 1 (B) 2

(C) 3 (D) 4

5. The magnetic lines of force :

(A) intersect at the neutral point

(B) intersect near north and south poles.

(C) cannot intersect at all

(D) depend upon the position of the magnet

6. Electrons are emitted from an electron gun where they are accelerated by a potential difference of 1500 V. The energy imparted to each electron will be :

(A) 2.4×10^{-16} J (B) 2.8×10^{-14} J

(C) 3.2×10^{-15} J (D) 2.4×10^{-14} J

7. Three resistance each of 8 Ω are connected to a triangle. The resistance between any two terminals :

(A) 12 Ω (B) 2 Ω

(C) 6 Ω (D) $\dfrac{16}{3}$ Ω

8. In fig. a ray of light undergoes refraction from medium A to medium B. If the speed of light in medium A is v then the speed of light in medium B will be -


(A) $\sqrt{3}\,v$ (B) $\dfrac{v}{\sqrt{3}}$

(C) $2v$ (D) $\dfrac{v}{2}$

9. If the far point of an eye is at 4 m, then identify the defect of eye and the lens needed to correct this.

(A) Hypermetropic and needs – 1.25 D lens.

(B) Hypermetropic and needs + 2.5 D lens.

(C) Myopic and needs + 0.25 D lens.

(D) Myopic and needs –0.25 D lens.

10. The reciprocal of resistance is conductance. If the unit of resistance is ohm, then the unit of conductance is :

(A) ohm
(B) mho
(C) ohm m^{-1}
(D) none of these

11. Which of the following graphs represents a ohmic conductor?


(A)
(B)
(C)
(D)
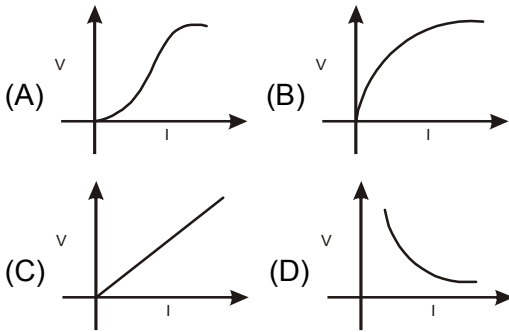
12. In an electric motor, conversion takes place of :

(A) Chemical energy into electrical energy

(B) Electrical energy into mechanical energy

(C) Electrical energy into light

(D) Electrical energy into chemical energy

**13.** In the figure shown the current flowing through 2 R is :
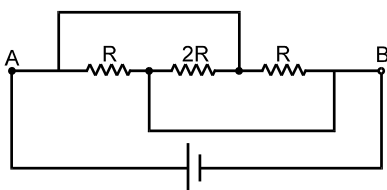
(A) from left to right
(B) from right to left
(C) no current
(D) None of these

14. An object 0.5 m tall is in front of a plane mirror at a distance of 0.2 m. The size of the image formed is-

(A) 0.2 m
(B) 0.5 m
(C) 0.1 m
(D) 1 m

15. Two mirrors are inclined at an angle 60°, an object is placed asymmetrically between them. Then number of images formed will be :

(A) 6
(B) 5
(C) 7
(D) 9

16. If there are three resister each of 2 ohm and generate the effective resistance of 3 ohm so how will the connection of the three resistances in the circuit?

(A) A parallel combination of two resistances and one is series

(B) A series combination of two resistances and one in parallel

(C) Three are in series

(D) Three are in parallel

17. If resistance of a wire is R ohm and wire is stretched to double its length, then what is its resistance?

(A) R
(B) 2R
(C) 4R
(D) $\dfrac{R}{2}$
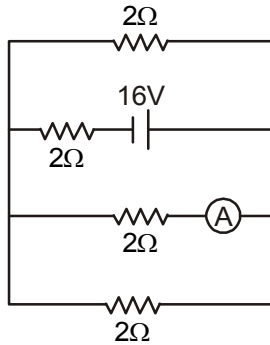
18. The current in the given circuit is
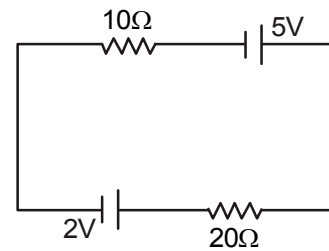
(A) 0.1 A
(B) 0.2 A
(C) 0.3 A
(D) 0.4 A

19. The potential difference between points A and B of adjoining figure is
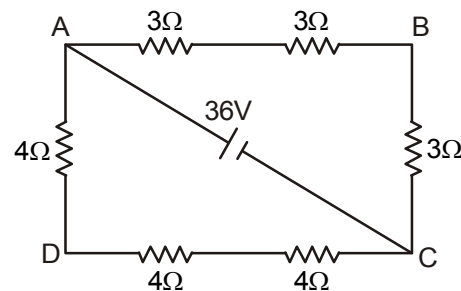
(A) 20V
(B) 12V
(C) 24V
(D) 18V

20. Magnetic effect of current was discovered by:

(A) Faraday
(B) Oersted
(C) Ampere
(D) Bohr

21. The reading of the ammeter as per figure shown is

(A) $\frac{1}{8}$ A
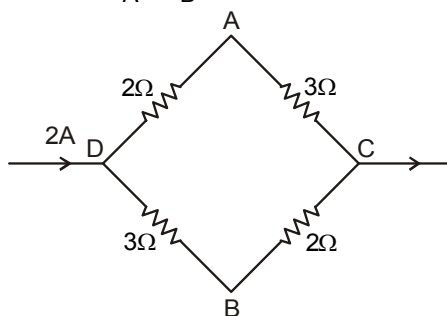
(B) $\frac{3}{4}$ A

(C) $\frac{1}{4}$ A

(D) 2A

22. The letter that show lateral inversion-

(A) Z

(B) M

(C) O

(D) W

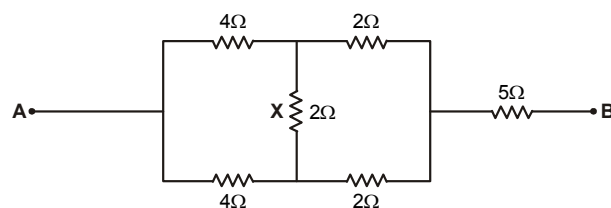**23.** The mirror which can produce a magnification of +1 is

(A) Convex Mirror

(B) Concave Mirror

(C) Plane Mirror

(D) Both Concave Mirror and Plane Mirror

24. A current of 2A flows in a system of conductors as shown. The potential difference $(V_A - V_B)$ will be

(A) +2V

(B) +1V

(C) –1V

(D) –2V

25. Find potential difference across resistance X if point A and B is connected by a battery of 8V.

(A) 1V

(B) 2V

(C) 0V

(D) 5V

26. Two bulb of 40W and 60W (rating at 120V) are connected in series with AC power supply of 100V. Which bulb will glow brighter?

(A) 40W

(B) 60W

(C) Both equal

(D) None

27. Find power dissipation is 6Ω resistance
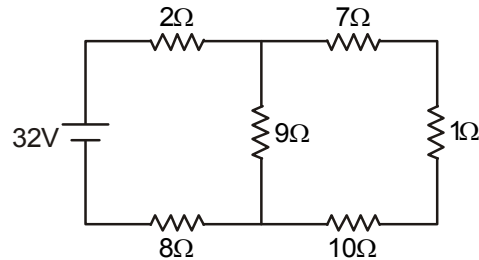
(A) 8W

(B) 16W

(C) 32W

(D) 24W

28. How many images are formed when two mirrors are placed at an angle of 72º ?

(A) A

(B) 5

(C) 6

(D) 7

29. What is the current supplied by the battery in the circuit shown below? Each resistance used in circuit is of 1 $k\Omega$ and potential difference $V_{AB} = 8$ V
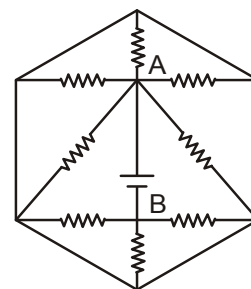
(A) 64 mA

(B) 15 mA

(C) 9.87 mA

(D) 1 mA

30. All the following are equivalent to watt except

(A) Amperes/ohm

(B) Joules/sec

(C) Amperes X volt

(D) Amperes/volt

CHEMISTRY

1. The valency of lead (Pb) in lead sulphate is–
   (A) 1   (B) 2
   (C) 4   (D) 3

2. The chemical formula of lead nitrate is–
   (A) $PbSO_4$ (B) $Pb(SO_4)_2$
   (C) $Pb(NO_3)_2$ (D) PbO

3. What is the common name of nitrogen trihydride (NH_3)
   (A) Water   (B) Common Salt
   (C) Quick lime   (D) Ammonia

4. The empirical formula of hydrogen peroxide is–
   (A) H_2O_2 (B) HO
   (C) $NaOH$ (D) CH_4

5. In the balanced equation - $aFe_2O_3 + bH_2 \longrightarrow cFe + dH_2O$ The values of a, b, c, d are respectively -
   (A) 1, 1, 2, 3   (B) 1, 1, 1, 1
   (C) 1, 3, 2, 3   (D) 1, 2, 2, 3

6. Which of the following reactions is not balanced?
   (A) $2NaHCO_3 \longrightarrow Na_2CO_3 + H_2O + CO_2$
   (B) $2C_4H_{10} + 12O_2 \longrightarrow 8CO_2 + 10H_2O$
   (C) $2Al + 6H_2O \longrightarrow 2Al(OH)_3 + 3H_2$
   (D) $4NH_3 + 5O_2 \longrightarrow 4NO + 6H_2O$

7. The equation- $Cu + xHNO_3 \longrightarrow Cu(NO_3)_2 + yNO_2 + 2H_2O$ The values of x and y are-
   (A) 3 and 5   (B) 8 and 6
   (C) 4 and 2   (D) 7 and 1

8. Which of the following statements is/are true?
   (A) The total mass of the system remains same in a chemical change.
   (B) A chemical change is permanent and irreversible.
   (C) A physical change is temporary and reversible.
   (D) All of these.

9. Which of the following statements is/are correct?
   (A) A chemical equation tells us about the substances involved in a reaction.
   (B) A chemical equation informs us about the symbols and formulae of the substances involved in a reaction.
   (C) A chemical equation tells us about the atoms or molecules of the reactants and products involved in a reaction.
   (D) All are correct

10. In the reaction $xPb(NO_3)_2 \xrightarrow{Heat} yPbO + zNO_2 + O_2$ x, y and z are-
    (A) 1, 1, 2   (B) 2, 2, 4
    (C) 1, 2, 4   (D) 4, 2, 2

11. A metal sulphate has the formula MSO_4. The phosphate of the same metal will have the formula -
    (A) $M_3(PO_4)_3$ (B) M_2PO_4
    (C) $M(PO_4)_2$ (D) $M_3(PO_4)_2$

12. One mole of NH_3 means :
    (A) 2.24 litre of NH_3 gas at STP
    (B) 1.7g of NH_3
    (C) 6.023×10^{23} molecules of NH_3
    (D) 34g of NH_3

13. The chemical reaction between quick-lime and water is characterised by :
    (A) Evolution of hydrogen gas
    (B) Formation of slaked lime precipitate
    (C) Change in temperature of mixture
    (D) Change in colour of the product

14. Which of the following is an example of oxidation reaction?
    (A) $Sn^{+2} - 2e \rightarrow Sn^{+4}$
    (B) $Fe^{+3} + e^- \rightarrow Fe^{+2}$
    (C) $Cl_2 + 2e \rightarrow {}^- 2Cl^-$
    (D) None of these

15. You are given the following chemical equation:
    $Mg(s) + CuO(s) \rightarrow MgO(s) + Cu(s)$
    This equation represents :
    (A) Decomposition reaction as well as displacement reaction

(B) Combination reaction as well as double displacement reaction

(C) Redox reaction as well as displacement reaction

(D) Double displacement reaction as well as redox reaction

16. Name an element which is common to all acids?

(A) Sulphur (B) Chlorine

(C) Nitrogen (D) Hydrogen

17. What type of reaction takes place when an acid dissolves in water :

(A) Exothermic

(B) Endothermic

(C) Substitution

(D) Double-displacement

18. What happens when an acid reacts with metal oxide?

(A) Salt and water is formed

(B) Metal hydride is formed

(C) Oxyacid will be formed

(D) Salt and Hydrogen gas is formed

19. Which statement is correct regarding acids?

I. Acid is a molecule which donates a proton or accepts electron pair in reactions.

II. Acid increases the concentration of hydrogen atoms or hydronium atoms in water.

III. Acids have a pH value of less than 7.

IV. The acid in the stomach helps in the digestion of food.

(A) Only I (B) Both II and IV

(C) I, III and IV (D) All the above

20. Which of the following is the milk of magnesia?

(A) Ammonium hydroxide (NH_4OH)

(B) Sodium hydroxide (NaOH)

(C) Magnesium hydroxide ($Mg(OH)_2$)

(D) Potassium hydroxide (KOH)

21. A metal compound reacts with dilute hydrochloric acid to produce effervescence. The gas evolved extinguishes a burning candle. If one of the compounds formed is calcium chloride. Then, what's the name of the metal compound?

(A) Calcium carbonate

(B) Calcium hydroxide

(C) Calcium hydroxide

(D) Calcium oxide

22. Bauxite is an ore of

(A) Iron (B) Aluminium

(C) Mercury (D) Copper

23. The sulphide ores are converted into oxides by heating strongly in the presence of excess air. This process is known as

(A) Roasting (B) Smelting

(C) Calcination (D) Refining

24. In electrolytic refining, the cathode is made up of

(A) Pure metal (B) Impure metal

(C) Alloy (D) Metallic salt

25. Which of the following alloys contains a non-metal as one of its constituents?

(A) Steel (B) Brass

(C) Amalgam (D) Bronze

26. An element has an atomic number of 15 with which of the following elements will it show similar chemical properties?

(A) Be(4) (B) Ne(10)

(C) N(7) (D) O(8)

27. The increasing order of the atomic radii of elements Na, Rb, K, Mg is

(A) Na < K < Mg < Rb

(B) K < Na < Mg < Rb

(C) Na < Mg < K < Rb

(D) Mg < Na < K < Rb

28. Electronic configuration of Al+3 is

(A) 2, 8, 3 (B) 2, 8, 8

(C) 2, 8 (D) 2, 8, 8, 3

29. Arrange the following elements into the increasing order of their metallic character along a period.

(A) S < Si < P < Al

(B) S < P < Si < Al

(C) Si < P < S < Al

(D) Si < S < P < Al

30. Two elements X and Y belong to group 1 and 2 respectively in the same period. The formulae of this oxides are

(A) XO, YO (B) X_2O, YO

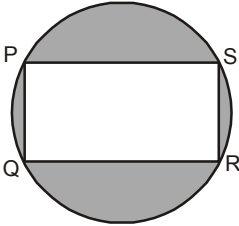(C) X_2O, Y_2O (D) XO, YO_2

BIOLOGY

1. Monomer of carbohydrate is -
   (A) Glycogen   (B) Cellulose
   (C) Glucose   (D) Sucrose

2. Which of the following is Not essential Life Processes-
   (A) Nutrition
   (B) Reproduction
   (C) Respiration
   (D) Excretion

3. 1 gm glucose provide............ energy.
   (A) 4.5 Kcal   (B) 4.8 Kcal
   (C) 9.3 Kcal   (D) 4.1 Kcal

4. Which of the following is Not Monosaccharides..
   (A) Glucose   (B) Fructose
   (C) Sucrose   (D) Galactose

5. Main fuel of body is -
   (A) Protein   (B) Carbohydrate
   (C) Lipid   (D) Water

6. Lactose is Made up of .
   (A) 2 Molecule of Glucose
   (B) Glucose + Galactose
   (C) Glucose of Fructose
   (D) Glucose of Sucrose

7. Example of polysaccharides is / are-
   (A) Starch   (B) Glycogen
   (C) Cellulose   (D) All

8. Monomer of protein is
   (A) Glucose   (B) Fatty acid
   (C) Amino acid   (D) Glycerol

9. Two molecule of Glucose are attached with-
   (A) Peptide bond
   (B) Glycosidic bond
   (C) Hydrogen bond
   (D) Covalent bond

10. How many types of amino acid Make protein-
    (A) 200 types   (B) 20 types
    (C) 210 types   (D) 2 types

11. Which of the following statements about the autotrophs is INCORRECT?
    (A) They synthesise carbohydrates from carbon dioxide and water in the presence of sunlight and chlorophyll.
    (B) They store carbohydrates in the form of starch.
    (C) They covert carbon dioxide and water into carbohydrates in the absence of sunlight.
    (D) They are BGA & Green plants.

12. Stomata controls
    (A) The loss of food material from the plant
    (B) The loss of water from plant
    (C) The loss of air from plant
    (D) The loss of energy from plant

13. Proteins $\xrightarrow{A}$ Peptones
    Identify the enzyme A involved in the above reaction.
    (A) Salivary amylase   (B) Bile juice
    (C) Pepsin   (D) Lipase

14. Which of the following represents the photosynthesis correctly?

    (A) $6CO_2 + 12H_2O \longrightarrow C_2H_{12}O_6 + 6H_2O + 6O_2$

    (B) $6CO_2 + 12H_2O \xrightarrow{Sunlight} C_6H_{12}O_6 + O_2 + 6H_2O$

    (C) $6CO_2 + 12H_2O \xrightarrow[Chlorophyll]{Sunlight} C_6H_{12}O_6 + 6H_2O + 6O_2$

    (D) $6CO_2 + 12H_2O \xrightarrow[Chlorophyll]{Sunlight} C_6H_{12}O_6 + 6CO_2 + 6H_2O$

15. Bile juice is stored in which organ of human body?
    (A) Kidney   (B) Gall bladder
    (C) Pancreas   (D) Liver

16. EMP is _____
    (A) Glycolysis   (B) Kreb's cycle
    (C) ETS   (D) Fermentation

17. Grafting is not possible in monocot plant because they
    (A) have parallel venation
    (B) have only one cotyledon
    (C) lack cambium
    (D) have scattered vascular bundle.

18. In respiration pyruvic acid is

(A) Broken down into two cardon fragments and carbon dioxide

(B) Formed only when oxygen is available

(C) One of the products of Kreb's cycle

(D) A result of protein break down

19. The blood leaving the tissues becomes richer in

(A) Carbon dioxide   (B) Water

(C) Heamoglobin   (D) Oxygen

20. During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the

(A) Cytoplasm   (B) Chloroplast

(C) Mitochondria   (D) Golgi body

21. The correct sequence of anaerobic reactions in yeast is

(A) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{mitochondria}}$ Ethanol + Carbondioxide

(B) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{cytoplasm}}$ Lactic Acid

(C) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{mitochondria}}$ Lactic Acid

(D) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{cytoplasm}}$ Ethanol + Carbondioxide

22. Which of the following is most appropriate for aerobic respiration ?

(A) Glucose $\xrightarrow{\text{mitochondria}}$ Pyruvate $\xrightarrow{\text{cytoplasm}}$ $CO_2 + H_2O$ + Energy

(B) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate $\xrightarrow{\text{mitochondria}}$ $CO_2 + H_2O$ + Energy

(C) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate + Energy $\xrightarrow{\text{mitochondria}}$ $CO_2 + H_2O$

(D) Glucose $\xrightarrow{\text{cytoplasm}}$ Pyruvate + Energy $\xrightarrow{\text{mitochondria}}$ $CO_2 + H_2O$ + Energy

23. A blood vessel which carries blood back to the heart is :

(A) Artery   (B) Vein

(C) Capillary   (D) Platelet

24. It has been found that people living in very high mountains have many more red corpuscles in their blood than people living in plains. Which one of the following best accounts for this phenomenon?

(A) the cold climate stimulated the production of red corpuscles to keep the body warm

(B) people of high mountains breathe more quickly

(C) the low air pressure requires more red corpuscles to supply the body cells with oxygen.

(D) the low air pressure in high mountains speeds up the blood circulation so that more red corpuscles are needed.

25. Which of the following has three-chambered heart?

(A) Pigeon   (B) Lizard

(C) Fish   (D) Lion

26. Which one of the following has cytoplasm but no nucleus:

(A) Xylem vesel   (B) Sieve tube

(C) Tracheid   (D) Companion cell

27. Excretion is

(A) Removal of substances not required by body

(B) Removal of useless substances and substances present in excess

(C) Formation of substances having some role in body

(D) All the above

28. Which one is uricotelic?

(A) Frog and toads

(B) Lizards and birds

(C) Cattle, monkey and man

(D) Molluscs

29. Correct order of excretory organs in cockroach, earthworm and rabbit are respectively

(A) Skin, malpighian tubules, kidney

(B) Malpighian tubules, nephridia, kidney

(C) Nephridia, malpighian tubules, kidney

(D) Nephridia, Kidney, green gland

30. Nitrogenous waste products are eliminated mainly as

(A) Urea in tadpole & ammonia in adult frog

(B) Ammonia in tadpole and urea in adult frog

(C) Urea in Both tadpole & adult frog.

(D) Urea in tadpole and uric in adult frog.

MATHEMATICS

1. The number of integers between $-\sqrt{8}$ and $\sqrt{32}$ is:

(A) 5   (B) 6

(C) 7   (D) 8

2. If x, y, z are real numbers such that $\sqrt{x-1}+\sqrt{y-2}+\sqrt{z-3} = 0$ then the values of x, y, z are respectively

(A) 1, 2, 3   (B) 0, 0, 0

(C) 2, 3, 1   (D) None of these

3. If $(\sqrt{2}+\sqrt{3})^2 = a+b\sqrt{6}$, where a, b $\in$ Q, then –

(A) a = 5, b = 6   (B) a = 5, b = 2

(C) a = 6, b = 5   (D) None of these

4. If V be the volume and S the surface area of a cuboid of dimensions a,b,c then $\dfrac{1}{V}$ is equal to:

(A) $\dfrac{S}{2}$(a + b + c)   (B) $\dfrac{2}{S}\left(\dfrac{1}{a}+\dfrac{1}{b}+\dfrac{1}{c}\right)$

(C) $\dfrac{2S}{a+b+c}$ (D) 2S(a + b + c)

5. Euclid's division lemma states that for two positive integers *a* and *b*, there exist unique integers *q* and *r* such that *a* = *bq* + *r*, where *r* must satisfy

(A) 1 < *r* < *b*   (B) 0 ≤ *r* < *b*

(C) 0 < *r* ≤ *b*   (D) 0 < *r* < *b*

6. If $x = \sqrt{2+\sqrt{2}}$, then $x^4+\dfrac{4}{x^4}$ is :

(A) $2\left(3-\sqrt{2}\right)$ (B) $6\sqrt{2}-2$

(C) $6-\sqrt{2}$ (D) 12

7. If the polynomial $P(x)=2x^4+x^3-5x^2-x+1$ is divided by the polynomial $Q(x)=x^2-x$ then the remainder is a linear polynomial $R(x)=ax+b$. Then $(a+b)$ equals :

(A) -2   (B) -1

(C) 1   (D) 2

8. If $a^x=\sqrt{b}$, $b^y=\sqrt[3]{c}$ and $c^z=\sqrt{a}$ then the value of xyz is :

(A) $\dfrac{1}{2}$ (B) $\dfrac{1}{3}$

(C) $\dfrac{1}{6}$ (D) $\dfrac{1}{12}$

9. If xy + yz + zx = 0 then the value of $\left(\dfrac{1}{x^2-yz}+\dfrac{1}{y^2-zx}+\dfrac{1}{z^2-xy}\right)$

(A) 3   (B) 2

(C) 0   (D) x + y + z

10. In the adjoining figure PQRS is a rectangle 8 cm x 6 cm, inscribed in the circle. The area of the shaded portion will be :

(A) 48 cm^2 (B) 42.50 cm^2

(C) 32.50 cm^2 (D) 30.5 cm^2

11. If α, β are the roots of $x^2 + px + q = 0$, the value of $\dfrac{\alpha}{\beta} + \dfrac{\beta}{\alpha}$ is -

(A) $\dfrac{p^2 - 2q}{q}$ (B) $\dfrac{p^2 + 2q}{q}$

(C) $\dfrac{-p^2 + 2q}{q}$ (D) $\dfrac{-p^2 - 2q}{q}$

12. Consider the following statement :

If in a frequency table, the class intervals are 40-44, 45-49, 50-54, etc., then when made continuous, they will be 39.5-44.5, 44.5-49.5, 49.5-54.5 etc. This statement is:

(A) wrong as 40-44 actually means 40-44.999... etc and hence when made continuous, they will be 40-45, 45-50, 50-55 etc.

(B) wrong as there are no readings between 44 and 45, between 49 and 50 etc and hence the correct intervals are 40-44, 45-49 etc.

(C) correct. Although the interval is actually 40-45 etc., there is the possibility of recording errors at each interval, namely 40, 45, 50 etc. and hence the intervals should be taken as 39.5-44.5, 44.5-49.5, 49.5-54.5 etc.

(D) correct, because the mid-values of 40-44, 45-49, 50-54 etc. and 39.5-44.5, 44.5-49.5, 49.5-54.5 etc. are the same.

13. The minimum value of the polynomial $p(x) = 3x^2 - 5x + 2$ is

(A) $-\dfrac{1}{6}$ (B) $\dfrac{1}{6}$

(C) $\dfrac{1}{12}$ (D) $-\dfrac{1}{12}$

14. Solve for x & y : $\dfrac{7}{3^x} - \dfrac{6}{2^y} = 15$ & $\dfrac{8}{3^x} = \dfrac{9}{2^y}$

(A) -3, -2 (B) -2, -3

(C) $\dfrac{-1}{2}, \dfrac{-1}{3}$ (D) $\dfrac{-1}{3}, \dfrac{-1}{2}$

15. A motor boat takes 12 hours to go down-stream and it takes 24 hours to return the same distance. What is the time taken by boat in still water ?

(A) 15 h (B) 16 h

(C) 8 h (D) 20 h

16. The point of intersection of straight lines 2x - y + 3 = 0, 3x - 7y + 10 = 0 lies in :

(A) I quadrant (B) II quadrant

(C) III quadrant (D) IV quadrant

17. In an equilateral triangle ABC, if AD $\perp$ BC, then

(A) $2\,AB^2 = 3\,AD^2$ (B) $4\,AB^2 = 3\,AD^2$

(C) $3\,AB^2 = 4\,AD^2$ (D) $3\,AB^2 = 2\,AD^2$

18. In a $\triangle$ ABC, AD is the bisector of $\angle$ BAC. If AB = 8 cm, BD = 6 cm and DC = 3 cm. Find AC

(A) 4 cm (B) 6 cm

(C) 3 cm (D) 8 cm

19. If ABC is a right triangle right-angled at B and M, N are the mid-points of AB and BC respectively, then $4\,(AN^2 + CM^2) =$

(A) $4\,AC^2$ (B) $5\,AC^2$

(C) $\dfrac{5}{4}\,AC^2$ (D) $6\,AC^2$

20. $\triangle$ABC ~ $\triangle$DEF, ar ($\triangle$ABC) = 9 cm^2, ar (DEF) = 16 cm^2. If Bc = 2.1 cm, then the measure of EF is

(A) 2.8 cm (B) 4.2 cm

(C) 2.5 cm (D) 4.1 cm

21. One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is either a red card or a king ?

(A) $\dfrac{6}{13}$ (B) $\dfrac{1}{2}$

(C) $\dfrac{7}{13}$ (D) $\dfrac{27}{52}$

22. If $\tan\theta = \dfrac{p}{q}$ then $\dfrac{p\sin\theta - q\cos\theta}{p\sin\theta + q\cos\theta}$

(A) $\dfrac{p^2 - q^2}{p^2 + q^2}$ (B) $\dfrac{q^2 - p^2}{q^2 + p^2}$

(C) $\dfrac{p^2 + q^2}{p^2 - q^2}$ (D) 1

23. If $\dfrac{\sin A}{1+\cos A} + \dfrac{\sin A}{1-\cos A} = x$, then x is :

(A) $\dfrac{1}{\cos^2 A}$ 　　　　(B) $2\sin A$

(C) $\dfrac{2}{\sin A}$ 　　　　(D) $\dfrac{2}{\sin^2 A}$

24. The equation $x^2 + 4x + k = 0$ has real roots, then-

(A) $k \geq 4$ 　　　　(B) $k \leq 4$

(C) $k \leq 0$ 　　　　(D) $k \geq 0$

25. Out of the following four relations :

(I) $\dfrac{\sin A}{1+\cos A} + \dfrac{\sin A}{1-\cos A} = \dfrac{2}{\sin A}$

(II) $\left(\dfrac{1+\cos A}{\sin A}\right)^2 = \dfrac{1+\cos A}{1-\cos A}$

(III) $\dfrac{\sin 10^{\circ}}{\cos 80^{\circ}} = 1$

(IV) $\sin^4 A - \cos^4 A = 1 + \sin^2 A$

the wrong one is

(A) I 　　　　(B) II

(C) III 　　　　(D) IV

26. The sum of all positive integral multiples of 5 less than 100 is –

(A) 950 　　　　(B) 1230

(C) 760 　　　　(D) 875

27. If the system of equations $3x + y = 1, (2k-1)x + (k-1)y = (2k+1)$ has no solution, then the value of k is

(A) 2 　　　　(B) 3

(C) -2 　　　　(D) 1

28. If the centroid of the triangle formed by the points (a, b), (b, c) and (c, a) is at the origin, then $a^3 + b^3 + c^3 =$

(A) abc 　　　　(B) 0

(C) a + b + c 　　　　(D) 3 abc

29. The angles of depression of two ships from the top of a light house are 45° and 30° towards east. If the ships are 100 m apart, the height of the light house is

(A) $\dfrac{50}{\sqrt{3}+1}$ m 　　　(B) $\dfrac{50}{\sqrt{3}-1}$ m

(C) $50(\sqrt{3}-1)$ m 　　(D) $50(\sqrt{3}+1)$ m

30. In the adjoining figure, POQ is the diameter of the circle. R and S are any two points on the circle. Then,
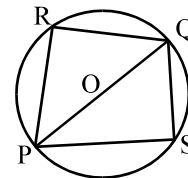
(A) $\angle$ PRQ > $\angle$ PSQ

(B) $\angle$ PRQ < $\angle$ PSQ

(C) $\angle$ PRQ = $\angle$ PSQ

(D) $\angle$ PRQ = $\dfrac{1}{2}$ $\angle$ PSQ

SAMPLE QUESTIONS FOR VII TO VIII MOVING

PHYSICS

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

CHEMISTRY

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

BIOLOGY

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

MATHEMATICS

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

SOCIAL SCIENCE

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

MENTAL ABILITY

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

ANSWER KEY FOR VIII TO IX MOVING

PHYSICS

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

CHEMISTRY

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

BIOLOGY

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

MATHEMATICS

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

SOCIAL SCIENCE

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

MENTAL ABILITY

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

ANSWER KEY FOR IX TO X MOVING

PHYSICS

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

CHEMISTRY

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

BIOLOGY

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

MATHEMATICS

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

SOCIAL SCIENCE

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

MENTAL ABILITY

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

ANSWER KEY FOR X TO XI MOVING

PHYSICS

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

CHEMISTRY

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

BIOLOGY

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

MATHEMATICS

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

Parishram

IIT-JEE | NEET | Nurture

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