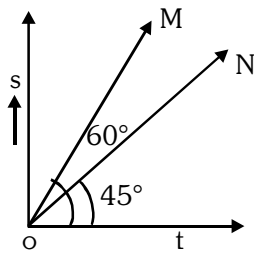


1. A particle moves with uniform acceleration from point P to point Q. Its velocity is 10 m/s at P and 20 m/s at Q. Its velocity at mid point of PQ is _____

- (1) 10 m/s (2) $10\sqrt{3}$ m/s
(3) $5\sqrt{10}$ m/s (4) 15 m/s

2. The following figure shows the time (t) and displacement (s) graph of two bodies M and N. If V_M and V_N are the corresponding velocities, then V_M/V_N is _____.



- (1) 1 (2) $1/\sqrt{2}$
(3) $1/\sqrt{3}$ (4) $\sqrt{3}$

3. Swimming is possible on account of

- (1) Newton's law of gravitation.
(2) Newton's first law of motion.
(3) Newton's second law of motion.
(4) Newton's third law of motion.

4. The distance of separation between the two masses is doubled and the medium between them is changed. Then the gravitational force of attraction between them _____

- (1) remains unchanged
(2) increases by two times
(3) decreases by four times
(4) increases by four times

5. Two wires of same length are made of copper. The diameters are in the ratio 1 : 2. The thin wire has a resistance of 100Ω . The resistance of thick wire is _____.

- (1) 100Ω (2) 75Ω
(3) 50Ω (4) 25Ω

6. Two electric bulbs 100W and 60W each, rated at 220V supply. If i_1 and i_2 be the currents in 100W and 60W respectively, then i_1/i_2 is:

- (1) $1/2$ (2) $5/3$ (3) $3/5$ (4) 2

7. A piece of wire of resistance 10Ω is stretched by itself to 5 times. Then its resistance becomes _____.

- (1) 250Ω (2) 500Ω
(3) 750Ω (4) 1000Ω

8. A boy runs towards a plane mirror with a speed of 10 m/s. He sees his image approaching towards him with a speed

- (1) 10 m/s (2) 20 m/s
(3) 40 m/s (4) 50 m/s

9. Which of the following produces virtual and erect image for all positions of the object ?

- (1) Concave lens (2) Convex lens
(3) Concave mirror (4) None

10. A ray of light in air medium has a wave length λ_1 . When it enters into glass medium, the wave length becomes λ_2 . Which of the following is true ?

- (1) $\lambda_1 = \lambda_2$ (2) $\lambda_1 < \lambda_2$
(3) $\lambda_1 > \lambda_2$ (4) $\lambda_1 = 2\lambda_2$

11. An electric current is set up in a straight conductor in vertically upward direction. P and Q are two points on east and west of the wire at equal distance from the wire. B_P and B_Q are the magnitudes of magnetic fields at P and Q. Then:

- (1) $B_P = B_Q$ (2) $B_P < B_Q$
(3) $B_P > B_Q$ (4) $B_P = B_Q/2$

12. Which of the following is true ?

- (1) Watt = Volt / Amp (2) Watt = (Volt)²/Amp
(3) Watt = Volt \times Amp (4) Watt = (Amp)²/Volt

13. Analyse the given statements and choose the correct option.

Statement-I : When current is represented by a straight line, the magnetic field will be circular.

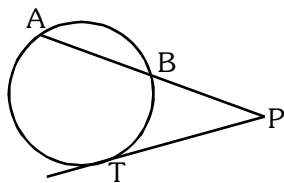
Statement-II : According to Fleming's left hand rule, the direction of the force is parallel to the magnetic field.

- (1) Both statement-I and statement-II are correct and statement-II is the correct explanation of statement-I.
(2) Both statement-I and statement-II are true but statement-II is not the correct explanation of statement-I.
(3) Statement-I is true but statement-II is false.
(4) Statement-I is false but statement-II is true.

14. An object is located at 10 cm in front of a convex lens of focal length 12 cm. The image is located at
 (1) 60 cm. at the back of the lens
 (2) 60 cm. on the same side of object
 (3) 5.45 cm. at the back of the lens
 (4) 5.45 cm. in front of the lens
15. Variable valency is exhibited by
 (1) Representative elements
 (2) Transition elements
 (3) Metallic elements
 (4) Non-metallic elements
16. Atomic mass of a metal, M is 56. The empirical formula of its oxide containing 70% of M is
 (1) MO_2 (2) M_2O_3 (3) M_3O_2 (4) MO_4
17. How much $\text{K}_2\text{Cr}_2\text{O}_7$ (Molecular mass = 294.19) is required to prepare one litre solution of 0.1 N $\text{K}_2\text{Cr}_2\text{O}_7$?
 (1) 9.8063 g (2) 7.3548 g
 (3) 4.9032 g (4) 3.6774 g
18. When alum is added to water containing dispersed clay, cogulation takes place, because
 (1) the clay particles are further subdivided
 (2) the charge carried by clay particles is neutralized
 (3) the density of water decreases
 (4) clay is decolourised
19. The set representing the correct order of first ionization enthalpy is
 (1) $\text{K} > \text{Na} > \text{Li}$ (2) $\text{Be} > \text{Mg} > \text{Ca}$
 (3) $\text{B} > \text{C} > \text{N}$ (4) $\text{Ge} > \text{Si} > \text{C}$
20. Which of the following metals is used in making bullet proof alloy steel ?
 (1) Silver (2) Copper
 (3) Gold (4) Zirconium
21. Among the following transformations, which one is oxidation ?
 (1) $\text{VO}_3^- \rightarrow \text{VO}_2^-$ (2) $\text{CrO}_3^- \rightarrow \text{CrO}_4^{2-}$
 (3) $\text{SO}_3 \rightarrow \text{SO}_4^{2-}$ (4) $\text{NO}_3^- \rightarrow \text{NO}_2^-$
22. Among the following which one is free from unsaturation?
 (1) Hexane (2) Hexene
 (3) Hexyne (4) Benzene
23. The adsorption of hydrogen by platinum is known as
 (1) Reduction (2) Hydrogenation
 (3) Occlusion (4) Dehydrogenation
24. Which of the following is not a protonic acid ?
 (1) $\text{B}(\text{OH})_3$ (2) $\text{PO}(\text{OH})_3$
 (3) $\text{SO}(\text{OH})_2$ (4) $\text{SO}_2(\text{OH})_2$
25. Among the following the strongest base is
 (1) NH_3 (2) PH_3
 (3) AsH_3 (4) SbH_3
26. The quantity of oxygen required for complete combustion of 1 mole of an organic compound $\text{C}_x\text{H}_y\text{O}_z$ is
 (1) $\left(x + \frac{y}{2}\right)$ moles (2) $\left(x + \frac{y}{4}\right)$ moles
 (3) $\left(x + \frac{y}{4} - \frac{z}{2}\right)$ moles (4) $(x + y + z)$ moles
27. 10^{-3} mole of KOH is added to 10 litres of pure water at 25°C . The pH will change by (assume no change in volume occurs)
 (1) 3 (2) 4 (3) 7 (4) 11
28. In which animal, oxygenated blood and carbon dioxide mixed blood never get mixed in the heart?
 (1) Fish (2) Frog
 (3) Lizard (4) Whale
29. Taking their number into consideration, which pair is not correctly matched ?
 (1) Ovary and testis
 (2) Fallopian tube and vas deferens
 (3) Urethra and uterus
 (4) ureter and uterus
30. Which one of the following pairs is not an example of homologous organ ?
 (1) Leg of horse and human hand
 (2) Wing of butterfly and wing of bird
 (3) Fin of fish and wing of bird
 (4) Leg of frog and fin of fish
31. Which one of the following plants help in nitrogen fixation ?
 (1) Wheat (2) Maize
 (3) Gram (4) Rice
32. Which one of the following is a correct statement ?
 (1) Smell centre is in the mid-brain.
 (2) Respiratory centre is in the fore-brain.
 (3) Visual reflex centre is in the mid-brain.
 (4) Hearing reflex centre is in the hind-brain.

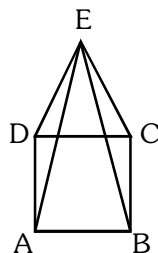
- 33.** Pick up the pair, in which both the hormones are not growth promoters.
 (1) Auxin-Abscisic acid (2) Gibberellin-Cytokinin
 (3) Auxin-Giberellin (4) Auxin - Cytokinin
- 34.** Which one of the following fish is a bottom feeder?
 (1) Rohu (2) Mrigal
 (3) Catla (4) Grass carp
- 35.** Taking the classification of infectious agents into consideration, pick up the pair with incorrect matching.
 (1) Malaria-Dengue (2) Typhoid-Tuberculosis
 (3) Influenza-Dengue (4) Hepatitis-Rabies
- 36.** In a Mendelian dihybrid cross, red colour of flower and round shape of seed are taken as dominant character, green colour of flower and wrinkle shape of the seed are taken as the corresponding recessive characters. How many plants with green flower and round seed will be obtained, out of the total number of 192 offspring produced in the F₂ generation ?
 (1) 56 (2) 36 (3) 48 (4) 64
- 37.** Which one of the following organism is incapable of nitrogen fixation ?
 (1) *Azotobacter* (2) Nitrifying bacteria
 (3) *Anabaena* (4) *Rhizobium*
- 38.** Which is not a non-exhaustible source of energy?
 (1) Natural gas (2) Nuclear energy
 (3) Geothermal energy (4) Biomass energy
- 39.** Which one of the following is secreted from pancreas ?
 (1) Bile (2) Lipase
 (3) Pepsin (4) Ptyalin
- 40.** Fragrant flowers with well developed nectaries are an adaptation for
 (1) hydrophily (2) anemophily
 (3) entomophily (4) Both (1) and (2)
- 41.** The arithmetic mean of a set of scores is \bar{X} . If each score is first divided by $\alpha, \alpha \neq 0$, and then increased by 10, the mean of the new score is
 (1) $\frac{\bar{X} - 10}{\alpha}$ (2) $\frac{\bar{X} + 10}{\alpha}$
 (3) $\frac{\bar{X} + 10\alpha}{\alpha}$ (4) $\frac{\alpha\bar{X} + 10}{\alpha}$
- 42.** The value of :
 $\tan 15^\circ \tan 25^\circ \tan 60^\circ \tan 65^\circ \tan 75^\circ$ is
 (1) $\sqrt{3}$ (2) 1 (3) $\frac{\sqrt{3}}{2}$ (4) $\frac{1}{\sqrt{3}}$
- 43.** If $\sec \theta + \tan \theta = x$, then the value of $\tan \theta$ is
 (1) $\frac{2x}{x^2 + 1}$ (2) $\frac{x^2 + 1}{2x}$
 (3) $\frac{x^2 - 1}{2x}$ (4) $\frac{2x}{x^2 - 1}$
- 44.** If $x + 3$ divides $x^3 + 5x^2 + kx$, then k is equal to
 (1) 2 (2) 4 (3) 6 (4) 8
- 45.** The ratio of the height of a pillar and its shadow is $1 : \sqrt{3}$. The angle of elevation of the sun is
 (1) 90° (2) 60° (3) 45° (4) 30°
- 46.** If 3 chairs and 1 table cost Rs. 800 and 5 chairs and 3 tables cost Rs. 2000, then the cost of 4 chairs and 1 table is
 (1) Rs. 900 (2) Rs. 850
 (3) Rs. 800 (4) Rs. 1000
- 47.** If $ax = b$, $by = c$ and $cz = a$, then the value of $x^2y^2z^2$ is _____
 (1) $a^2b^2c^2$ (2) 1
 (3) 4 (4) $\frac{1}{a^2b^2c^2}$
- 48.** If the product of 1000 counting numbers is 1000, then their minimum sum is
 (1) 1000 (2) 1015 (3) 1030 (4) 1031
- 49.** Roots of $ax^2 + b = 0$ are real and distinct, if
 (1) $ab > 0$ (2) $a > 0, b > 0$
 (3) $ab = 0$ (4) $ab < 0$
- 50.** If the roots of the equation $\alpha x^2 + \beta x + \gamma = 0$ are 1 and 2, then one of the roots of the equation $\beta x^2 + \alpha x + \gamma = 0$ is
 (1) 1 (2) 0 (3) -2 (4) 2
- 51.** What is the probability of getting two heads in four tosses of a coin?
 (1) $1/2$ (2) $3/8$
 (3) $1/4$ (4) $3/16$
- 52.** If the radius of a cylinder is decreased by 50% and height increased by 50% to form a new cylinder, then the volume will be decreased by
 (1) 50% (2) 55% (3) 62.5% (4) 63%

53. If the volume and surface area of a sphere are numerically the same, then its radius is
 (1) 4 (2) 3 (3) 2 (4) 1
54. A cone has radius r and height h . It is melted and 3 identical cones are formed each having the same radius as the original cone and height H . Then the value of $\frac{H}{h}$ is
 (1) $\frac{1}{4}$ (2) $\frac{1}{3}$ (3) $\frac{1}{2}$ (4) 1
55. If the distances of a point from two distinct points in a plane is equal, then its locus is
 (1) Rectangle
 (2) Perpendicular bisector of the line joining two points
 (3) Circle
 (4) Square
56. If the line segment joining $(2, 3)$ and $(-1, 2)$ is divided internally in the ratio $3 : 4$ by the line $x + 2y = k$, then the value of k is
 (1) $\frac{41}{7}$ (2) $\frac{36}{7}$ (3) $\frac{31}{7}$ (4) $\frac{5}{7}$
57. If the points $(1, 1)$, $(-1, -1)$ and $(-\sqrt{3}, k)$ are the vertices of an equilateral triangle then the value of k is
 (1) 1 (2) $\sqrt{3}$ (3) -1 (4) $-\sqrt{2}$
58. A solution x_0 to the inequation $x^2 - 5x + 6 \leq 0$ satisfies
 (1) $x_0 > 3$ (2) $x_0 < 2$
 (3) $2 \leq x_0 \leq 3$ (4) $x_0 < 0$
59. In the given figure, PT is a tangent. If $PT = 12$ cm, $PB = 8$ cm then the length of AB is



- (1) 8 cm (2) 9 cm (3) 10 cm (4) 12 cm

60. In the given, $ABCD$ is a square and CDE is an equilateral triangle. Then the measure of $\angle EBC$ is



- (1) 15° (2) 25° (3) 45° (4) 60°

61. Who was the founder of Indian National Congress?
 (1) Woomesh Chandra Banarjee
 (2) Allan Octavian Hume
 (3) Mahatma Gandhi
 (4) Lord Curzon
62. Who said "Swaraj is my birth right" ?
 (1) Jawaharlal Nehru
 (2) Subhas Chandra Bose
 (3) Bal Gangadhar Tilak
 (4) Bipin Chandra Pal
63. In which place of India in the Civil Disobedience Movement, Gandhiji broke the Salt law ?
 (1) Kathiawar (2) Inchudi
 (3) Rambha (4) Dandi
64. Which event in Odisha is regarded as Second Jallianwala Event ?
 (1) Firing at Iram (2) mathili Firing
 (3) Firing at khiraidihi (4) Nimapara Firing
65. Why did the non-cooperation Movement come to an end ?
 (1) Due to Partition of Bengal
 (2) Due to opposition of Congress leaders
 (3) Due to illness of Mahatma Gandhi
 (4) Due to Chauri Chaura incident
66. Who was the ruler of Russia during the 1917 Revolution ?
 (1) Nicholas I (2) Alexander I
 (3) Nicholas II (4) Lenin
67. To which party did Mussolini belong ?
 (1) Nazi Party (2) Fascist Party
 (3) Socialist Party (4) Communist Party
68. Which country dropped the atom bomb in Japan ?
 (1) Russia
 (2) England
 (3) United States of America
 (4) France
69. In which year UNO was formed ?
 (1) 1944 (2) 1945 (3) 1946 (4) 1947
70. The failure of which Treaty is regarded as an important cause of the Second World War ?
 (1) Treaty of England
 (2) Treaty of London
 (3) Treaty of Versailles
 (4) Treaty of Frankfurt

- 71.** Who among the following do not participate in the election of the President in India ?
 (1) Elected members of Lok Sabha
 (2) Elected members of Rajya Sabha
 (3) Elected members of Legislative Assemblies
 (4) Nominated members of Rajya Sabha
- 72.** Which of the following is not a function of the judiciary ?
 (1) Administration of Justice
 (2) Interpretation of Laws
 (3) Enforcement of Laws
 (4) Protection of the Constitution
- 73.** Which of the following is an example of One-party System ?
 (1) China (2) England
 (3) Australia (4) Canada
- 74.** Which of the constitutional strategies has been adopted for National Integration in India ?
 (1) Secularism
 (2) Abolition of untouchability
 (3) Social Justice
 (4) All of these
- 75.** Where is the Headquarters of the U.N. Situated?
 (1) Newzeland (2) Rome
 (3) Japan (4) Newyork
- 76.** Which of the following countries is not a member of SAARC ?
 (1) Bangladesh (2) Nepal
 (3) Sri Lanka (4) Myanmar
- 77.** Which of the following is not a justification for Globalisation ?
 (1) Rapid Economic Development
 (2) Employment Generation
 (3) Neo-Colonialism
 (4) Rapid spread of Information and Technology
- 78.** Which of the following is a major challenge to the successful working of Democracy ?
 (1) Decentralisation of Power
 (2) Free mass Media
 (3) Sectarianism
 (4) Economic Equality
- 79.** Under which Article of the Constitution of India does the state of Jammu and Kashmir enjoys a special status ?
 (1) Article 356 (2) Article 360
 (3) Article 368 (4) Article 370
- 80.** The Chief Election Commissioner of India is appointed for a term of :
 (1) 5 years (2) 6 years
 (3) 3 years (4) 4 years
- 81.** Land in Economics means
 (1) Surface of the earth
 (2) River
 (3) Sea
 (4) All the above
- 82.** Which of the following is the custodian of foreign exchange in India ?
 (1) The World Bank
 (2) The Reserve bank of India
 (3) Securities and Exchange Board of India
 (4) Ministry of Finance
- 83.** Public Distribution System is mean for the distribution of
 (1) Seeds (2) Fertilizer
 (3) Food grains (4) All the above
- 84.** Maximum contribution to India's national Income comes from:
 (1) Agriculture (2) Mining
 (3) Service Sector (4) Industry
- 85.** Which one of the following is required for globalisation ?
 (1) Reduction Income Tax
 (2) Reduction in Import Duty
 (3) Increase in money supply
 (4) Restriction of exports
- 86.** On which mountain range the Godwin Austin is located ?
 (1) The Himalayan range
 (2) The Zaskar range
 (3) The Karakoram range
 (4) The Ladakh range
- 87.** Which is the leading state of India in rubber cultivation ?
 (1) Kerala (2) Goa
 (3) Tamil Nadu (4) Karnataka
- 88.** Old alluvium soils are known as
 (1) Regur (2) Khadar
 (3) Bhangar (4) Loess

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| <p>89. Which one of the following is the longest river valley project in India ?
 (1) Damodar (2) Hirakud
 (3) Farakka (4) Nagarjuna</p> <p>90. Which forest covers largest area in Odisha ?
 (1) Evergreen forest
 (2) Sub-tropical dry deciduous forest
 (3) Tropical moist deciduous forest
 (4) Tidal forest</p> <p>91. Udagamandalam is located on:
 (1) The Aravallis (2) The Vindhya
 (3) The Nilgiris (4) The Himalayas</p> <p>92. Which region is called as the Ruhr of India ?
 (1) Telengana region
 (2) Kolkata region
 (3) Chhotanagpur region
 (4) Ahmedabad-Mumbai region</p> <p>93. The disintegration and decomposition of rocks is called as:
 (1) Weathering (2) Erosion
 (3) Denudation (4) Mass wasting</p> <p>94. The largest producer of coffee in the world is
 (1) Sri Lanka (2) India
 (3) Indonesia (4) Brazil</p> | <p>95. Which is the measuring unit of oceanic depth ?
 (1) Metre (2) Foot
 (3) Fathom (4) Knot</p> <p>96. FIPB stands for
 (1) Foreign Investment Promotion Board
 (2) Foreign Infrastructure payment Base
 (3) Fiscal Investment Promotion Board
 (4) None of these</p> <p>97. The limit of foreign equity was raised to _____ in many activities
 (1) 100% (2) 50%
 (3) 25% (4) 110%</p> <p>98. According to the new economic policy of 1991 the role of public sector was limited to only _____ industries.
 (1) four (2) five
 (3) six (4) seven</p> <p>99. It refers to integration of various economies of the world.
 (1) Globalisation (2) Liberalisation
 (3) Privatisation (4) Industrialisation</p> <p>100. Till _____ Indian government was following select policy in regard to import.
 (1) 1990 (2) 1991
 (3) 1993 (4) 1994</p> |
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