



PART – A

Fill in the blanks from the options given below (Questions 1 to 7) :

1. Somebody is knocking _____ the door.
A) at B) across C) through D) with
2. She never listens _____ her mother.
A) at B) for C) to D) in
3. My friend shared his book _____ me.
A) for B) with C) on D) at
4. Sheela was _____ in the river.
A) depressed B) drowse C) drowned D) drug
5. The children came _____ as animals.
A) dressed B) make up C) looked D) glitter
6. If in _____ consult your doctor.
A) drought B) draft C) decline D) doubt
7. The firm is involved in a legal _____ with a rival company.
A) disrepute B) disrespect C) dispute D) disrupt

Mark the correct tense in the given sentences (Questions 8 to 10) :

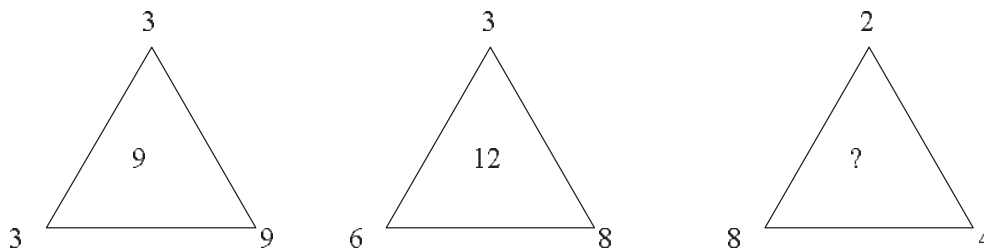
8. He had been driving for about an hour.
A) past perfect continuous B) past perfect
C) past continuous D) past simple
9. She has not waited long.
A) present perfect B) present simple
C) present perfect continuous D) present continuous
10. Did you meet her ?
A) present simple B) past simple C) present perfect D) past perfect
11. Peter walked 10 meters towards North, took turn left and walked 15 meters and again took left turn and walked 10 meters and stopped walking. Which direction was he facing when he stopped ?
A) West B) North C) East D) South



12. Introducing a girl, John said, Her mother is the only daughter of my mother-in-law.”
How is John related to that girl ?

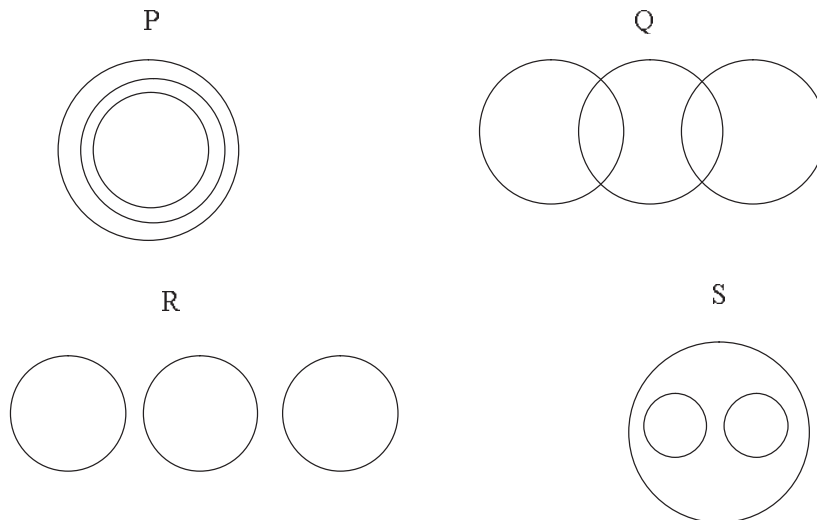
- A) Uncle
- B) Father
- C) Brother
- D) Husband

13. Direction : Find the missing number (?) in the following :



- A) 8
- B) 4
- C) 2
- D) 6

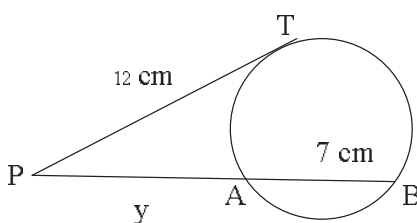
14. Which of the following diagrams shows the relationship amongst English, Greek, Latin ?



- A) P
- B) Q
- C) R
- D) S



15. A cube is coloured red on all of its faces. It is then cut into 64 smaller cubes of equal size. The smaller cubes so obtained are now separated. How many smaller cubes will have at least two surfaces painted with red colour ?
 A) 4
 B) 18
 C) 32
 D) 24
16. P and Q each working alone can do a work in 10 days and 15 days, respectively. They started the work together but Q left after sometime and P finished the remaining work in 5 days. After how many days from the start did Q leave?
 A) 3 days
 B) 6 days
 C) 2 days
 D) 4 days
17. What is the total surface area of a cube of side 3 cm ?
 A) 27 sq. cm.
 B) 36 sq. cm.
 C) 54 sq. cm.
 D) 72 sq. cm.
18. The speeds of three scooters are in the ratio of 2:3:4. Find the ratio between the time taken by these scooters to travel the same distance.
 A) 2:3:4
 B) 4:3:2
 C) 4:3:6
 D) 6:4:3
19. Find the value of y in the following figure. PT = 12 cm is a tangent to the circle and AB = 7 cm.



- A) 16 cm
 B) 9 cm
 C) 12 cm
 D) 7 cm
20. If $\left(2x - \frac{3}{x}\right) = 5$, find the value of $\left(4x^2 - \frac{9}{x^2}\right)$
 A) 25
 B) 30
 C) 35
 D) 49



21. The Governor of the Reserve Bank of India is

- A) Mr. Raghuram Rajan
- B) Mr. D. Subba Rao
- C) Mr. Urjit Patel
- D) Mr. Rajiv Maharishi

22. Match the book given in Table-1 with the respective authors given in Table-2

	Table – 1		Table – 2
a	Harry Potter and the Chamber of Secrets	i	Alexander Frater
b	Chasing the Monsoon	ii	Chetan Bhagat
c	Two States	iii	J.K. Rowling
d	Love Story	iv	Erich Segal

- A) a-iv, b-ii, c-iii, d-i
- B) a-iii, b-i, c-ii, d-iv
- C) a-iv, b-i, c-ii, d-iii
- D) a-i, b-ii, c-iii, d-iv

23. Arjuna Awards are given for

- A) Music
- B) Outstanding performance in sports
- C) Dance
- D) Both A) and B)

24. International Women’s Day is celebrated on

- A) March 5th
- B) March 08th
- C) April 10th
- D) April 14th

25. India’s space rocket launching centre is at

- A) Port Blair
- B) Hassan
- C) Kochi
- D) Sriharikota

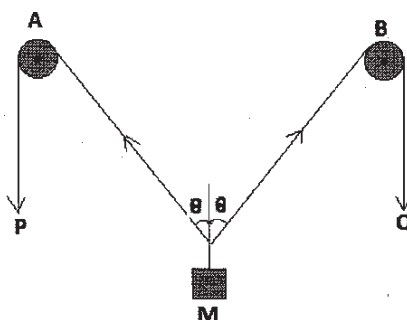


PART – B
SECTION – I
(PHYSICS)

26. Error in the measurement of radius of a sphere is 1%. Then error in the measurement of volume is

- A) 1% B) 5% C) 3% D) 8%

27. In the arrangement shown in figure below, the ends P and Q of un-stretchable string move downward with uniform speed 'u'. Pulleys A and B are fixed. The mass M moves upwards with a speed



- A) $2u \cdot \cos \theta$ B) $u / \cos \theta$ C) $2u / \cos \theta$ D) $u \cdot \cos \theta$

28. A bomb is released from an aero plane flying horizontally. The trajectory of the bomb will be

- A) straight line B) circle C) parabola D) hyperbola

29. A dancer on ice spins faster when she folds her arms. This is due to

- A) Increase in angular momentum and increase in rotational kinetic energy
 B) Decrease in angular momentum and increase in rotational kinetic energy
 C) Constant angular momentum and increase in rotational kinetic energy
 D) Constant angular momentum and decrease in rotational kinetic energy

30. A simple pendulum of length 'l' has a maximum angular displacement 'θ'. What would be the maximum kinetic energy of this bob?

- A) Mgl B) $Mgl \cos \theta$ C) $Mgl (1 + \cos \theta)$ D) $Mgl (1 - \cos \theta)$

31. A shell explodes in midair. Its total

- A) Momentum increases B) Momentum decreases
 C) Kinetic energy increases D) Kinetic energy decreases

SECTION – II
(CHEMISTRY)

51. Which is not correctly matched ?
- A) Number of orbitals in an orbit = n^2
 - B) Number of subshells in an orbit = n
 - C) Number of orbitals in a subshell = $2l+1$
 - D) Number of electrons of same spins in an orbit = $2n^2$
52. Which of the following is not correct ?
- A) Increasing order of size: $\text{Al}^{3+} < \text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-}$
 - B) Increasing order of ionisation enthalpy: $\text{B} < \text{Be} < \text{C} < \text{O} < \text{N}$
 - C) Increasing order of electronegativity: $\text{Br} < \text{N} < \text{O} < \text{F}$
 - D) Increasing order of electron affinity: $\text{B} < \text{N} < \text{C} < \text{O} < \text{F}$
53. In d^6 low spin octahedral complex cation crystal field splitting energy is
- A) $-2/5 \Delta_0 + 2P$
 - B) $-2/5 \Delta_0 + P$
 - C) $-12/5 \Delta_0 + P$
 - D) $-12/5 \Delta_0 + 3P$
54. Which of the following order is not according to given property ?
- A) Increasing acidic behaviour: $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3 < \text{SbH}_3$
 - B) Increasing pK_a : $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$
 - C) Increasing basic character: $\text{MnO}_3 < \text{MnO}_2 < \text{Mn}_2\text{O}_3 < \text{MnO}$
 - D) Increasing bond length: $\text{O}_2^{2+} < \text{O}_2^+ < \text{O}_2 < \text{O}_2^- < \text{O}_2^{2-}$
55. Which of the following statement is incorrect ?
- A) Tl^+ is more stable than Tl^{3+} due to inert pair effect
 - B) Catenation tendency of phosphorus is more than nitrogen
 - C) Chlorine is more reactive than fluorine
 - D) sp^3 hybridisation is present in SiO_2 and diamond
56. Which of the following is incorrect order ?
- A) Bond angle of $\text{CH}_4 > \text{NH}_3 > \text{H}_2\text{O} > \text{H}_2\text{S}$
 - B) Dipole moment of $\text{BF}_3 < \text{NF}_3 < \text{NH}_3 < \text{H}_2\text{O}$
 - C) Thermal stability of $\text{K}_2\text{CO}_3 > \text{CaCO}_3 > \text{MgCO}_3 > \text{BeCO}_3$
 - D) Boiling point of $\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$

SECTION – III
(MATHEMATICS)

76. If n be the number of terms and l denotes the last term of an A.P., then
- A) $l = a + (n + 1)$
 - B) $l = a + (n + 1) d$
 - C) $l = a + (n - 1) d$
 - D) $l = a - (n - 1) d$
77. If A and B are the sets and $n(A) = p$, $n(B) = q$ then
- A) $n(A \times B) = pq$
 - B) $n(A \times B) = p/q$
 - C) $n(A \times B) = p - q$
 - D) $n(A \times B) = q/p$
78. The sum of an infinite number of terms of a G.P. is 4, and the sum of their cube is 192. Then the series is
- A) $-6, -3, 1\frac{1}{3}, \dots$
 - B) $6, -3, 1\frac{1}{2}, \dots$
 - C) $6, -3, 2, \dots$
 - D) $8, -6, 3, -2, \dots$
79. $\frac{1}{2!} + \frac{1+2}{3!} + \frac{1+2+3}{4!} + \dots \infty$ is
- A) e
 - B) $\frac{e}{2}$
 - C) $\frac{1}{2} + \left(\frac{1}{n+1}\right)$
 - D) $-e$
80. If $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & -2 & 1 \\ 4 & 2 & 1 \end{bmatrix}$, then which is true
- A) $A^3 - 23A - 40I = 0$
 - B) $A^3 + 23A + 40I = 0$
 - C) $A^3 + 23A - 40I = 0$
 - D) $A^3 - 23A + 40I = 0$



SECTION – IV
(BIOLOGY)

101. Which part of the cell was observed by Robert Hook for the first time that led the discovery of Cell ?
A) Mitochondria
B) Nucleus
C) Plasma membrane
D) Cell wall
102. Who suggested the name Mitochondria ?
A) C. Golgi
B) C. Benda
C) R. Altman
D) T. Boveri
103. In cell division the nuclear membrane generally disappear during
A) Prophase
B) Post Prophase
C) Metaphase
D) Anaphase
104. Which is best soil for the growth of plants ?
A) Loam
B) Sand
C) Gravel
D) Clay
105. Which of the following law was not addressed by Gregor John Mendel in his experiment ?
A) Law of dominance
B) Law of independent assortment
C) Law of codominance
D) All of the above
106. The vascular tissues in angiospermic plants generally consists of
A) Living cells only
B) Dead cells only
C) Living as well as dead cells
D) Initially living, but later on dead cells only
107. Which of the following is not a characteristic feature of monocotyledonous plant ?
A) Lack of cambium
B) Scattered vascular bundle
C) Parallel venation in leaves
D) Secondary growth
108. The Head Inflorescence is a characteristic feature of the family
A) Cruciferae
B) Malvaceae
C) Compositae
D) Cucurbitaceae