A1

Max Time : 2 Hours   (Please Read The Instructions Carefully)   **Max Marks : 100**
Roll No………………………..   **INSTRUCTIONS**

1. Paper 1 has two parts: Part I & Part II

    (a)   Part I : Reasoning (50 marks)

    (b)   Part II: Elementary Mathematics (50 marks)

2. Each section carries 50 objectives type of questions.

3. There will be four possible answers to every question. Candidates are required to fill correct answer in the OMR sheet with Black ball pen.

4. For each correct answer, 1 mark will be granted and 0.33 mark will be deducted for every wrong answer.

5. If a candidate gives more than one answer, it will be treated as a wrong answer and 0.33 mark will be deducted. There will be no penalty for questions left unanswered.

6. Candidates should not mark in the question paper. They can use blank pages provided in the question paper for rough work.

7. To be eligible to qualify, a candidate must obtain minimum 40% marks each in Part I & II separately and a minimum of 50% aggregate in total.

PART–1 : REASONING

Direction In each of the following question a number of series is given with one term missing. Choose the correct alternative that will continue the same pattern.

Q1.   6, 12, 21, ?, 48
      (a) 33   (b) 38   (c) 40   (d) 45

Q2. $11\frac{1}{9}$, $12\frac{1}{2}$, $14\frac{2}{7}$, $16\frac{2}{3}$, ?

      (a) $8\frac{1}{3}$ (b) $19\frac{1}{2}$ (c) 20   (d) $22\frac{1}{3}$

Direction In each of the following questions, various terms of an alphabet series are given with one missing term as shown by (?) choose the missing term out of the given alternatives.

Q3.   H, I, K, N, ?
      (a) O   (b) Q   (c) R   (d) S

Q4.   DHL, PTX, BFJ, ?
      (a) CGK   (b) KOS   (c) NRV   (d) RVZ

Q5.   _ stt _ tt _ tts _
      (a) tsts   (b) ttst   (c) sstt   (d) tsst

Q6.   J2Z, K4Z, 17V, ?, H16R, M22P
      (a) I11T   (b) L11S   (c) L12T   (d) L11T

Direction Choose the correct alternative which shows the same relationship.

Q7.   Eye: Wink :: Heart: ?
      (a) Move   (b) Throb   (c) Pump   (d) Quiver

Q8.   Sedative : Pain :: Solace: ?
      (a) Irritation   (b) Kill   (c) Grief   (d) Hurt

Q9.   Igloo Ice: : Marquee : ?
      (a) Canvas   (b) Silk   (c) Buckram   (d) Satin

Direction Choose the correct alternative which shows the same group relationship.

Q10. Pituitary : Thyroid: Pancreas : ?
    (a) Adrenal   (b) Heart   (c) Liver   (d) Kidney

Q11. Edge : Corner : Tip : ?
    (a) Snow   (b) Hill   (c) Brink   (d) Cap

Direction Choose the odd one out.

Q12. Find the odd one out.
    (a) Veena   (b) Sitar   (c) Drum   (d) Guitar

Q13. Find the odd one out.
    (a) Iron   (b) Nickel   (c) Cobalt   (d) Aluminium

Directions: In each of the following questions, certain pairs of words are given, out of which the words in all pairs except one, bear a certain common relationship. Choose the pair in which the words are differently related

Q14. (a) Sun: Star   (b) Rocket : Space   (c) Moon: Satellite   (d) Jupiter : Planet

Q15. (a) Petrol: Car   (b) Ink : Pen   (c) Garbage : Dustbin   (d) Lead: Pencil

Q16. In a certain code, BELIEF is written as AFKKDI. How is SELDOM written in that code?
    (a) RDKCNL   (b) RFKENM   (c) RFKFNP   (d) TFKENP

Q17. If GOLD is coded as HOME, COME is coded as DONE and CORD is coded as DOSE, how would you code SONS?
    (a) TPOT   (b) TOOT   (c) TOOS   (d) TONT

Q18. If 'clock' is called 'television', 'television' is called radio', radio' is called 'oven', 'oven' is called 'grinder and 'grinder' is called 'iron', in what will a lady bake?
    (a) Radio   (b) Oven   (c) Grinder   (d) Iron

Q19. If 'sky' is 'star', 'star' is 'cloud', 'cloud' is 'earth', 'earth' is 'tree' and 'tree' is 'book', then where do the birds fly?
    (a) Cloud   (b) Sky   (c) Star   (d) Data inadequate

Q20. Pointing to a man in a photograph, Asha said, "His mother's only daughter is my mother." How is Asha related to that man?
    (a) Nephew   (b) Sister   (c) Wife   (d) Niece

Q21. When Anuj saw Manish, he recalled, "He is the son of the father of my daughter's mother." Who is Manish to Anuj?
    (a) Brother–in–law   (b) Brother   (c) Cousin   (d) Uncle

Q22. Five children are sitting in a row. S is sitting next to P but not T. K is sitting next to R who is sitting on the extreme left and T is not sitting next to K. Who are sitting adjacent to S?
    (a) K and P   (b) R and P   (c) Only P   (d) P and T

Q23. D is taller than C and E. A is not as tall as E. C is taller than A. D is not as tall as B. Who among them is next to the tallest one?
    (a) A   (b) D   (c) B or D   (d) Data inadequate

Q24. I am facing South. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?
    (a) North   (b) North–west   (c) East   (d) North–east

Q25. Vijay travelled 12 km Southward, then turned right and travelled 10 km, then turned right and travelled 12 km. How far was Vijay from the starting point?
   (a) 22 km   (b) 44 km   (c) 12 km   (d) 10 km

Q26. Which of the following diagrams indicates the best relation between Males, Cousins and Nephews?

Q27. Which of the following diagrams indicates the best relation between Hockey, Football and Cricket?
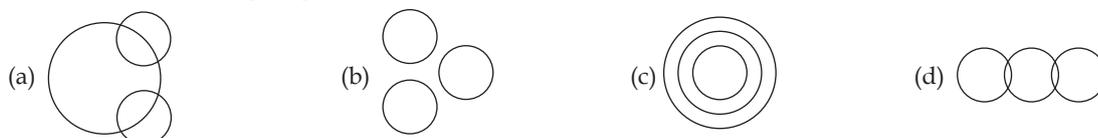
Q28. In the given diagram, circle represents professionals, square represents dancers, triangle represents musicians and rectangle represents Europeans. Different regions in the diagram are numbered 1 to 11. Who among the following is neither a dancer nor a musicians but is professional and not a European?
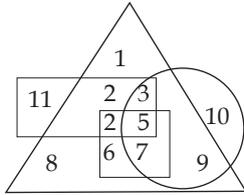
(a) 8   (b) 11   (c) 1   (d) 10

Q29. In a row of forty children, P is thirteenth from the left end and Q is ninth from the right end. How many children are there between P and R if R is fourth to the left of Q?
(a) 12   (b) 13   (c) 14   (d) 15

Q30. In a queue, A is eighteenth from the front while B is sixteenth from the back. If C is twenty–fifth from the front and is exactly in the middle of A and B, then how many persons are there in the queue?
(a)45   (b)46   (c) 47   (d) 48

Q31. Ajay left home for the bus stop 15 minutes earlier than usual. It takes 10 minutes to reach the stop. He reached the stop at 8.40 a.m. What time does he usually leave home for the bus stop?
(a) 8.30 a.m.   (b) 8.45 a.m.   (c) 8.55 a.m.   (d) Data inadequate

Q32. A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing in the beginning of the next hour. If he begins his ascent at 8.00 a.m., at what time will he first touch a flag at 120 feet from the ground?
(a) 4 p.m.   (b) 5 p.m.   (c) 6 p.m.   (d) None of these

Q33. If + means –, – means x, ÷ means + and × means ÷, then 15 – 3 + 10 × 5 ÷ 5 =?
(a)5   (b) 22   (c) 48   (d) 52

Q34. If + stands for ×,– for ÷, × for – and ÷ for +, find the value of 26 + 74 – 4 × 5 + 2.
(a) 220   (b) 376   (c) 478   (d) 488

Q35. If A stands for +, B stands for –, C stands for ×, then what is the value of (10 C 4) A (4 C 4) B 6 ?
(a) 60   (b) 56   (c) 50   (d) 46

Q36. Find the missing term.

51	11	61
64	30	32
35	?	43

(a) 25   (b) 27   (c) 18   (d) 20

Q37. Find the missing term.

24	144	384
6	36	?
2	12	32
1	6	16

(a) 80   (b) 85   (c) 91   (d) 96

Q38. Find the missing term.

| 3C | 27D | 9E |
| 71 | 21K | 3M |
| 4D | ? | 7J |

(a) 11E   (b) 28G   (c) 35I   (d) 48F

Q39. Find the missing character in the following figure.
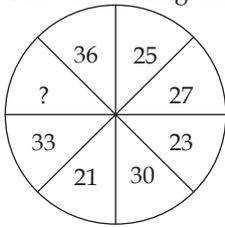

(a) 19   (b) 22   (c) 32   (d) 35

Q40. Find the missing character in the following figure.
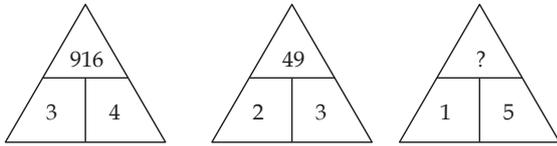
(a) 125   (b) 215   (c) 251   (d) 512

Q41. Find the missing character in the following figure.
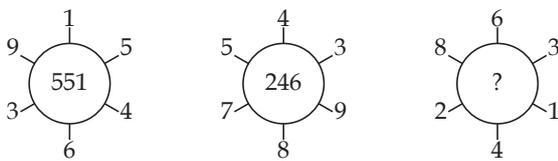
(a) 262   (b) 622   (c) 631   (d) 824

**Direction Consider the given statements to be true and decide which of the given conclusion/assumptions can definitely be drawn from the given statement**

Q42. Statements   All water is divine. All temples are divine.
    Conclusions :   I. All water is temple.
                   II. All temples are water.
(a) if only conclusion I follows;   (b) if only conclusion II follows;
(c) if neither conclusion I nor II follows;   (d) if both conclusions I and II follow.

Q43. Statements: All tubes are handles. All cups are handles.
    Conclusion: I. All cups are tubes.
                  II. Some handles are not cups.
(a) if only conclusion I follows;   (b) if only conclusion II follows;
(c) if neither conclusion I nor II follows;   (d) if both conclusions I and II follow.

Q44. Statement: Some hens are cows. All cows are horses.
    Conclusion   I. Some horses are hens.
                  II. Some hens are horses.
(a) if only conclusion I follows;   (b) if only conclusion II follows;
(c) if neither conclusion I nor II follows;   (d) if both conclusions I and II follow.

Direction Each of the problems, contains four figures marked as (A), (B), (C), (D) and answer figures marked as (a), (b), (c) and (d). Select a figure from amongst the answer figures which will continue in the same series as given in the problem figure.

Q45. Find out the next figure
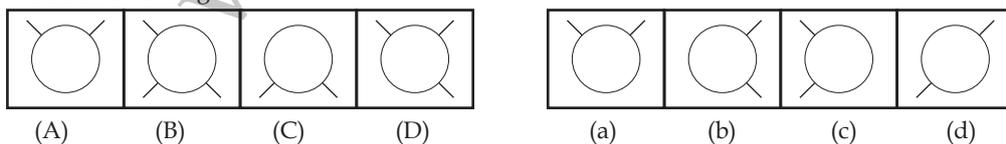
(A)   (B)   (C)   (D)   (a)   (b)   (c)   (d)

Q46. Find out the next figure
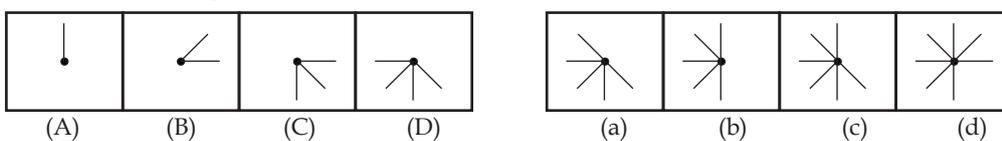
(A)   (B)   (C)   (D)   (a)   (b)   (c)   (d)

Direction Each of the following problems , contains 4 figures marked (a), (b), (c), (d). Find the odd figure.

Q47.


(a) (b) (c) (d)

Q48.

(a) (b) (c) (d)
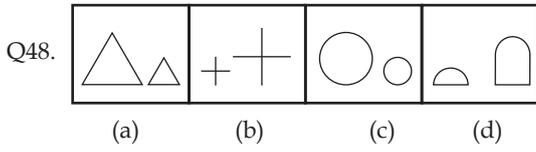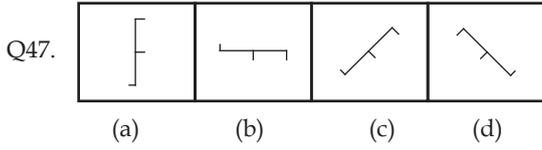
Q49. How many triangles are there puzzles .
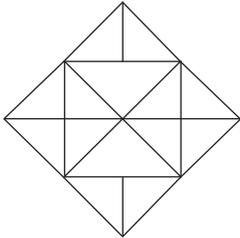
(a) 18 (b) 20 (c) 28 (d) 34

Q50. How many maximum squares are in the following figure?
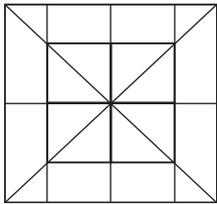

(a) 13 (b) 16 (c) 19 (d) 20.

PART–II : ELEMENTARY MATHEMATICS

Q51. log 10 – log 5 + log 25
(a) log 50   (b) log 10   **(c)** 1   (d) 0

Q52. If an equilateral DT, a square S and a circle C have an equal area, what is the ratio of their perimeters?
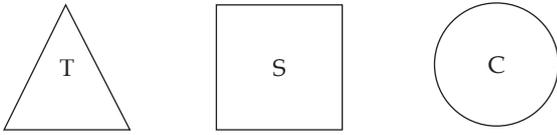
(a) $3\frac{1}{3}$: 1 : $\sqrt{\pi}$ (b) $3\frac{3}{4}$: 2 : $\sqrt{\pi}$ (c) $3\frac{3}{4}$: 2: $\sqrt{\pi}$ (d) $3\frac{3}{2}$: 2 : $\sqrt{\pi}$

Q53. If a= 4011 and b= 3989 they value of ab
(a) 15999879   (b) 15899879   (c) 15989979   (d) 15998879

Q54. The product of all prime members between 80 and 90
(a) 83   (b) 89   (c) 7389   (d) 598347

Q55. In an office there are 108 tables and 132 chairs. If $\frac{1}{6}$ of the tables and $\frac{1}{4}$ of the chairs are broken. How many people can work in the office if each person requires one table and one chair?
(a) 86   (b) 90   (c) 92   (d) 99

Q56. $99\frac{1}{7}$ + $99\frac{2}{7}$ + $99\frac{3}{7}$ + $99\frac{4}{7}$ + $99\frac{5}{7}$ + $99\frac{6}{7}$ is equal to
(a) 603   (b) 600   (c) 598   (d) 597

Q57. The smallest number to be added to 1000 so that 45 divides the sum exactly is
(a) 35   (b) 80   (c) 20   (d) 10

Q58. A man walks 'a' km in 'b' hours. The time taken to walk 200 meters is
(a) $\frac{200b}{a}$ hours.   (b) $\frac{b}{5a}$ hours.   (c) $\frac{b}{a}$ hours.   (d) $\frac{ab}{200}$ hours.

Q59. A and B travel the same distance at a speed of 9 km/hr. and 10 km/hr respectively. If A takes 36 minutes more than B, the distance travelled by each.
(a) 48 km.   (b) 48 km.   (c) 180   (d) 160

Q60. A washing machine is sold at a discount of 30%. If a man buys it for ₹6580 its list price is
(a) ₹7500   (b) ₹8600   (c) ₹9400   (d) ₹6900

Q61. The price that Akbar should mark on a pair of shoes which costs him ₹1200 to get 12% gain after allowing a discount of 16% (in rupees) is
(a) ₹1344   (b) ₹1433   (c) ₹1600   (d) ₹1500

Q62. ABCD is a square. Draw an equilateral ΔPBC on side BC considering BC is a base and an equilateral ΔQAC on diagonals AC considering AC as a base. Find the value of $\frac{\text{area of } \Delta PBC}{\text{area of } \Delta QAC}$
(a) $\frac{1}{2}$ (b) 1   (c) $\frac{1}{3}$ (d) $\frac{1}{4}$

Q63. ABC is a triangle in which DE ‖ BC and AD : DB = 5 : 4 then DE : BC is:
(a) 4 : 5   (b) 9 : 5   (c) 4 : 9   (d) 5 : 9

Q64. If a and to are the lengths of the sides of a right whose hypotenuse is 10 units whose area is 20 sq. units then the value of $(a + b)^2$ is
(a) 140   (b) 120   (c) 180   (d) 160

Q65. Two chords of length a unit and b unit of a circle make angles 60° and 90° the centre of a circle respectively. Then the correct relation is:
(a) b = $\sqrt{2}$a   (b) b = 2a   (c) b = $\sqrt{3}$a   (d) b = 3$\sqrt{2}$a

Q66. If $x = 10 + 3\sqrt{11}$. What is the value of $\sqrt{x} - \frac{1}{\sqrt{x}}$?
(a) $2\sqrt{3}$ (b) $\sqrt{22}$ **(c)** 18   (d) $3\sqrt{2}$

Q67. If a + b + c = 0 then the value of is $\frac{a^2 + b^2 + c^2}{ab + bc + ca}$ is:
(a) 2   (b) –2   (c) 0   (d) 4

Q68. If a – 6 b = 3 then the value of $a^3 – 216 b^3 – 54 ab$ is
(a) 9   (b) 1   (c) 27   (d) 64

Q69. The value of following is $\dfrac{\sin\theta\ \mathrm{cosec}\theta\ \tan\theta\ \cot\theta}{\sin^2\theta + \cos^2\theta}$

(a) 2   (b) 0   (c) $\tan\theta$ (d) 1

Q70. If a $\cos\theta$ + b $\sin\theta$ = p and a $\sin\theta$ – b $\cos\theta$ = q then the relation between a,b,p and q is

(a) $a^2 - b^2 = p^2 - q^2$ (b) $a^2 + b^2 = p^2 + q^2$ (c) a + b = p + q   (d) a – b = p – q

Q71. A vertical post 15 ft high is broken at a certain height and its upper part not completely separated meets the ground at an angle of 30°. Find the height at which the post is broken.

(a) 10ft.   (b) 5ft.   (c) $15\sqrt{3}$ ft.   (d) $5\sqrt{3}$ ft.

Q72. The cliff of a mountain is 180 m. high, and the angles of depression of two ships on the either side of chiff are 30° and 60°. What is the distance between the two ships?

(a) 400 m.   (b) 400 m.   (c) 415.68 m.   (d) 398.6 m.

Q73. ABCD is a trapezium whose side AD is parallel to BC, diagonals AC and BD intersect at O. If AO = 3, CO = x – 3, BO = $3x$ – 19 and DO = x – 5 the value (s) of x will be:

(a) 7, 8   (b) 12, 6   (c) 7, 10   (d) 8, 9

Q74. The inradius of an equilateral Δ is of length 3 cm. Then the length of each of its medians is:

(a) 12 cm.   (b) $\dfrac{9}{2}$cm.   (c) 4cm.   (d) 9cm.

Q75. What is the value of $\dfrac{2.75 \times 2.75 \times 2.75 - 2.25 \times 2.25 \times 2.25}{2.75 \times 2.75 + 2.75 \times 2.25 + 2.25 \times 2.25}$

(a) 2   (b) $\dfrac{3}{2}$ (c) 1   (d) $\dfrac{1}{2}$

Q76. If $x = 1 + \sqrt{2} + \sqrt{3}$ then the value of $(x + \dfrac{1}{x-1})$ is

(a) $1 + 2\sqrt{3}$ (b) $2 + \sqrt{3}$ **(c) $3 + \sqrt{2}$**   (d) $2\sqrt{3} - 1$

Q77. A man can row 30 km downstreams and return in a total of 8 hours. If the speed of boat in still water is four times the speed of the current, then the speed of the current is:

(a) 1 km/h.   (b) 2 km/h.   **(c) 4 km/h.**   (d) 3 km/h.

Q78. Speed of a boat along and against the current are 12km/ h and 8km/h respectively. Then the speed of the current in km/h is:

(a) 5   (b) 4   (c) 3   (d) 2

Q79. Janardan completes $\dfrac{2}{3}$ of his work is 10 days. Time the will take complete $\dfrac{3}{5}$ of the same work, is:

(a) 4 days   (b) 8 days   (c) 6 days   (d) 9 days

Q80. A can do $\dfrac{1}{4}$ of a work in 10 days B can do $\dfrac{1}{3}$ of the work is 20 days. In how many days can both A and B together do the work?

(a) 30 days   (b) 32 days   (c) 24 days   (d) 25 days

Q81. The ratio of the volumes of water and glycerine in 240cc of mixture is 1:3. The quantity of water (in cc) that should be added to the mixture so the volume of water and glycerine becomes 2:3 is:

(a) 55   (b) 60   (c) 62.5   (d) 64

Q82. The compound interest on a sum of ₹5000 at 8% per annum for 9 months when interest is compounded quarterly is:

(a) ₹300   (b) ₹300.12   (c) ₹306.04   (d) ₹308

Q83. In how many will a sum of ₹800 at 10% per annum compound interest, compounded semi annually becomes ₹926.10?

(a) $1\dfrac{1}{2}$years   (b) $1\dfrac{2}{3}$years   **(c) $2\dfrac{1}{3}$years**   (d) $2\dfrac{1}{2}$years

Q84. The marked price of an article is ₹500. It is sold at successive discounts of 20% and 10%. The selling price of the article (in rupees) is :

(a) 350   (b) 375   (c) 360   (d) 400

Q85. By selling a car for ₹ 64000 Mr. Rao lost 20%. Then the cost price of the car is:

(a) ₹72000   (b) ₹76800   (c) ₹80000   (d) ₹84000

Q86. In the given figure if chords AB and CD of the circle interest each other at right angles, then $x + y$ is equal to

(a) 45°   (b) 60°   (c) 75°   (d) 90°
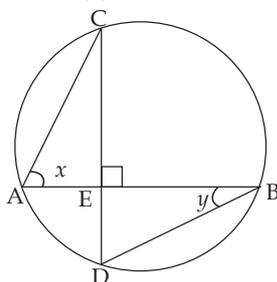
Q87. In the given figure, if BC = 1.5cm, then $2BD + \dfrac{BC}{2}$ is
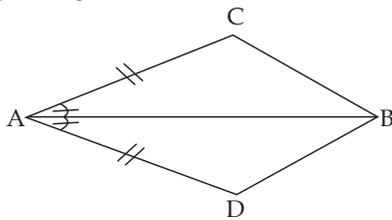
(a) 2.20cm   (b) 3.75cm   (c) 4.25cm   (d) 5.10cm

Q88. In the given figure ΔRST what is the value of x
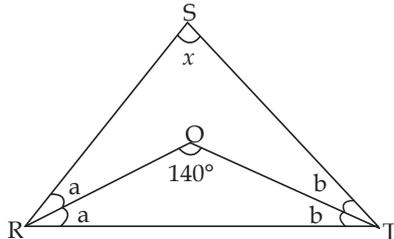
(a) 40°   (b) 90°   (c) 80°   (d) 100°

Q89. If (K–2, K + 1) is a solution of the equation $2x + 3y = 4$, then K is equal to
(a) 0   (b) 2   (c) 4   (d) 1

Q90. The point (a, 4) lies on the graph $x + 2y = 6$ then a is equal to
(a) 0   (b) 2   (c) –2   (d) 4

Q91. Value of $\dfrac{1}{2+\sqrt{5}} + \dfrac{1}{\sqrt{5}+\sqrt{6}} + \dfrac{1}{\sqrt{6}+\sqrt{7}} + \dfrac{1}{\sqrt{7}+\sqrt{8}}$ will be
(a) 0   (b) 2   (c) $\sqrt{2}$ (d) $2(\sqrt{2} – 1)$

Q92. The internal and external diameters of the hollow hemispherical vessel are 24cm and 25 cm respectively. The cost to point 1cm^2 the surface is ₹0.05. Find the total cost to paint the vessel all over [Take $\pi = \dfrac{22}{7}$]
(a) ₹96.28   (b) ₹100   (c) ₹150   (d) ₹75

Q93. Find the values of a and b if $\dfrac{7+3\sqrt{5}}{3+\sqrt{5}} + \dfrac{7-3\sqrt{5}}{3-\sqrt{5}} = a +\sqrt{5}b$
(a) 2, 3   (b) 2, 2   (c) 0, 1   (d) 2, 4

Q94. The lateral surface area of two pillars if height of the pillar is 21m. and radius of the base is 2.1 m.
(a) 454.4m^2 (b) 554.4m^2 (c) 1054.4m^2 (d) 954.4m^2

Q95. The diameter of the sphere is decreased by 25%. By what percent does its curved surface area decrease?
(a) 25%   (b) 12.5%   (c) 20%   (d) 43.75%

Q96. The sides of a triangle are x, $x+1$, $2x–1$ and its area is $x\sqrt{10}$ what is the value of x?
(a) 2   (b) 10   (c) 4   (d) 6

Q97. When simplified $(x^{-1} + y^{-1})^{-1}$ is equal to
(a) xy (b) $x + y$ (c) $\dfrac{xy}{x + y}$ (d) $\dfrac{x + y}{xy}$

Q98. $\sqrt{7 + \sqrt{48}}$ is equal to
(a) $7 + 2\sqrt{3}$ (b) $7 +\sqrt{3}$ (c) $2 + \sqrt{3}$ (d) $3 + \sqrt{2}$

Q99. If $p(x) = x^2 – 2\sqrt{2}x + 1$ then $p(2\sqrt{2})$ is equal to
(a) –1   (b) 0   **(c) 2**   (d) 1

Q100. If two complementary angles are such that one angle is $1\dfrac{1}{2}$ times the other, then the smaller angle among them
(a) 30°   (b) 40°   (c) 50°   (d) 36°

1. (a) 33

   Explanation:
   The pattern is + 6, + 9, + 12, + 15, .. So, missing term =
   21+ 12 = 33.

2. (c) 20

   Explanation:
   The given sequence is $\frac{100}{9}, \frac{25}{2}, \frac{100}{7}, \frac{50}{3}....$ *i.e.,* $\frac{100}{9},$
   $\frac{100}{8}, \frac{100}{7}, \frac{100}{6},$ *... So, missing term =* $\frac{100}{5}$ *= 20*

3. (c) R

   Explanation:

   $H \xrightarrow{+1} I \xrightarrow{+2} K \xrightarrow{+3} N \xrightarrow{+4} \textcircled{R}$

4. (c) NRV

   Explanation:

   Ist Letter : $\quad D \xrightarrow{+12} P \xrightarrow{+12} B \xrightarrow{+12} \textcircled{N}$

   IInd Letter : $\quad H \xrightarrow{+12} T \xrightarrow{+12} F \xrightarrow{+12} \textcircled{R}$

   IIIrd Letter : $\quad L \xrightarrow{+12} X \xrightarrow{+12} J \xrightarrow{+12} \textcircled{V}$

5. (d) tsst

   Explanation: The series is tst/tst/tst/tst. Thus, the pattern
   'tst' is repeated.

6. (d) L11T

   Explanation: The first letters in odd numbered terms
   form series.

   Ist Letter : $\quad J \xrightarrow{-1} I \xrightarrow{-1} H$ *and in even numbered*

   terms form series $K \xrightarrow{+1} \textcircled{L} \xrightarrow{+1} M$

   IInd Letter : $\quad 2 \xrightarrow{+2} 4 \xrightarrow{+3} 7 \xrightarrow{+4} \textcircled{11} \xrightarrow{+5} 16$
   $\xrightarrow{+6} 22$

   IIIrd Letter : $\quad Z \xrightarrow{-2} X \xrightarrow{-2} V \xrightarrow{-2} \textcircled{T} \xrightarrow{-2} R$
   $\xrightarrow{-2} P$

7. (b) Throb

   Explanation: Second denotes the activity of the first.

8. (c) Grief

   Explanation: First relieves one from the second.

9. (a) Canvas

   Explanation: First is made up of the second.

10. (a) Adrenal

    Explanation: All are endocrine glands.

11. (c) Brink

    Explanation: All are synonyms.

12. (c) Drum

    Explanation: All except Drum are string instruments.

13. (d) Aluminium

    Explanation: All except Aluminium are magnetic
    materials.

14. (b) Rocket : Space

    Explanation: In all other pairs, second denotes the class
    to which the first belongs.

15. (c) Garbage : Dustbin

    Explanation: In all other pairs, first is required by the
    second for its functioning.

16. (c) RFKFNP

    Explanation: The first, third and fifth letters of the word
    are each moved one step backward; the second, fourth and
    sixth letters are moved one, two and three steps forward
    respectively to obtain the corresponding letters of the
    code.

17. (b) TOOT

    Explanation: Each consonant in the word is moved one
    step forward to obtain the corresponding letter of the
    code, while the vowels remain unchanged.

18. (c) Grinder

    Explanation: The lady shall bake in an 'oven' but 'oven'
    is called 'grinder. So, the lady will bake in 'grinder.

19. (c) Star

    Explanation: Birds fly in the 'sky' and as given, 'sky' is
    'star'. So, birds fly in the 'star'.

20. (d) Niece

    Explanation: Asha's mother's mother is man's mother
    i.e., Asha's mother is man's sister or Asha is man's niece.

21. (a) Brother–in–law

    Explanation: Anuj's daughter's mother– Anuj's wife;
    Anuj's wife's father– Anuj's father–in–law; Father–in–
    law's son– Anuj's brother–in–law. So, Manish is Anuj's
    brother–in–law.

22. (d) P and T

    Explanation: S is sitting next to P. So, the order S, P or
    P, S is followed. K is sitting next to R. So, the order R. K
    is followed because R is on the extreme left. T is not next
    to P or K.

    So, the arrangement will be R, K, P, S, T. Clearly, P and
    T are sitting adjacent to S.

23. (b) D

    Explanation: Clearly, A is shorter than each one of C and
    E. Thus, D is taller than each one of A, C and E. But, B
   *is taller than D. So, B is the tallest and D comes next.*

24. (d) North–east

Explanation: The movements of the person are from A to F. as shown in Fig. Clearly, the final position is F which is to the North–east of the starting point A.
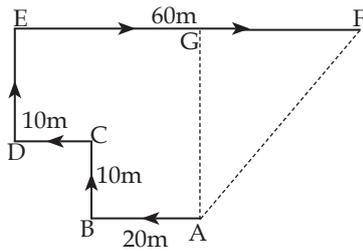

25. (d) 10 km

Explanation: AD = BC = 10km
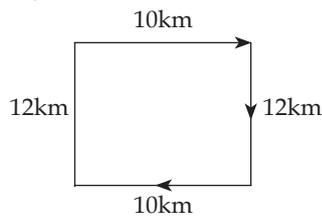
26. (d)

Explanation: All Nephews are males, cousin is a separate entity.
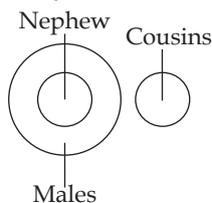
27. (b)

Explanation:
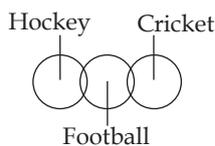
28. (c) 1

Explanation: 10 is neither a dancer nor a musician but is professionals and not a European.

29. (c) 14

Explanation: Q is 9th from the right end and R is fourth to the left of Q. So, R is 13th from the right end.

Number of children to the left of R = (40 – 13) = 27.

Thus, R is 28th from the left end. Also, P is 13th from the left end. Clearly, there are 14 persons between P and R.

30. (c) 47

Explanation: A is 18th from front and C is 25th.

Number of persons between A and C = 6.

Since C is exactly in middle of A and B, so number of persons between C and B = 6

$$\xleftarrow{\quad 17 \quad} A \xleftarrow{\quad 6 \quad} C \xleftarrow{\quad 6 \quad} B \xleftarrow{\quad 15 \quad}$$
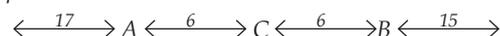
∴ *Number of persons in the queue*

= (17 + 1 + 6 + 1 + 6 + 1 + 15) = 47.

31. (b) 8.45 a.m.

Explanation: Clearly. Ajay left home 10 minutes before 8.40 a.m., i.e., at 8.30 a.m. But it was 15 minutes earlier than usual. So, he usually left for the stop at 8.45 a.m.

32. (c) 6 p.m.

Explanation: Clearly, the monkey climbs 10 feet in one hour. So, it will climb upto a height of 90 feet in 9 hours, i.e., at 5.00 p.m. It will then ascend a height of 30 feet in the next hour to touch the peak at 6.00 p.m.

33. (c) 48

Explanation: Using the correct symbols, we have:

Given expression = 15 × 3 – 10 ÷ 5 + 5 = 45 – 2 + 5 = 50 – 2 = 48.

34. (c) 478

Explanation: Using the correct symbols, we have:

Given expression = 26 × 74 ÷ 4 – 5 + 2 = 26 × $\dfrac{37}{2}$ – 5 + 2

= 13 × 37 – 5 + 2 = 481 – 5 + 2 = 478.

35. (c) 50

Explanation: Using the correct symbols, we have:

Given expression (10 × 4) + (4 × 4) – 6

= 40 + 16 – 6 = 56 – 6 = 50.

36. (b) 27

Explanation: In the first row, 5 × 1= 5, 6 × 1=6, 5 + 6=11.

In the second row, 6 × 4 = 24, 3 × 2 = 6, 24 + 6 = 30.

In the third row, 3 × 5 = 15, 4 × 3 = 12.

So, missing number = 15 + 12 = 27.

37. (d) 96

Explanation: The numbers in each column follow the pattern ÷ 4, ÷ 3, ÷ 2.

In the first column, 24 ÷ 4 = 6, 6 +3 = 2, 2 ÷ 2 = 1.

In the second column, 144 ÷ 4 = 36, 36 ÷ 3 = 12, 12 ÷ 2 = 6.

In the third column, missing number = 384 ÷ 4 = 96.

38. (b) 28G

Explanation: The letters in the first row form a series C, D, E (a series of consecutive letters). The letters in the second row form a series I, K, M (a series of alternate letters).

Similarly, the letters in the third row will form the series D, G, J (a series in which each letter is 3 steps ahead of the previous one).

So, the missing letter is G. Also, the number in the second column is equal to the product of the numbers in the first and third columns. So, missing number is (4 × 7) i.e., 28. Thus, the answer is 28 G.

39. (a) 19

Explanation: Starting from 27 and moving clockwise, the numbers in alternate segments form the series :27, 30, 33, 36.

The numbers in remaining segments, moving anticlockwise, may form the series: ?, 21, 23, 25 or 21, 23, 25, ?

So, the missing number is either 19 or 27.

40. (a) 125

Explanation: The numbers obtained by squaring the numbers at the bottom are combined together physically to get the number in the upper part.

41. (b) 622

Explanation: We have: (915 – 364) = 551, (789 – 543) = 246.

So, missing number (863 – 241) = 622.

42. (c) if neither conclusion I nor II follows.

Explanation: Since the middle term 'divine' is not distributed. even once in the premises, no definite conclusion can be drawn

43. (c) if neither conclusion I nor II follows.

Explanation: Both the premises are A type propositions. So, in either, the middle term "handles forming the predicate is not distributed. Since the middle term is not distributed even once in the premises, no definite conclusion follows:

44. (d) if both conclusions I and II follow.

Explanation: Since one premise is particular, the conclusion must be particular and should not contain the middle term. So, II follows. I is the converse of II and so it also holds.

45. (a)

Explanation: Similar figure repeats in every second step and each time a particular figure reappears, it gets rotated through 180°.

46. (b)

Explanation: In each step, the figure rotates 45'CW and a new line segment is added at the CW–end of the existing line segments.

47. (d)

*Explanation: All other figures can be rotated into each other.*

48. (d)

Explanation: In each figure except fig. (d), the two elements are similar, though unequal in size.

49. (c) 28

Explanation: The figure may be labelled as shown below:

The simplest triangles are AEI, AIH, BEJ, BJF, CFK, CKG, DGL, DLH, EOJ, FOJ, FOG, LOG, HOL and HOE i.e., 14 in number.

The triangles composed of two components each are EAH, FBE, BEO, EOF, BFO, FCG, GDH, HOD, HOG and GOD i.e., 10 in number.
The triangles composed of three components each are EFH, EHG, FGH and EFG i.e., 4 in number. Thus, there are 14+ 10 + 4 = 28 triangles in the given figure.
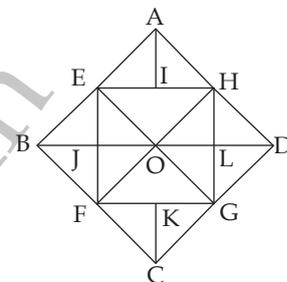
50. (b)

Explanation: We shall label the figure as shown.

The simplest squares are BCNM, CDON, PQIJ and QRHI i.e., 4 in number.

The squares composed of two components each are MNTS, NOUT, STQP and TURQ i.e., 4 in number. L


The squares composed of five components each are ACTL, CEFT, TFGI and K LTIK i.e., 4 in number.

The squares composed of six components each are BDUS and SUHJ i.e., 2 in number.

There is only one square i.e., MORP composed of eight components.

There is only one square i.e., AEGK composed of twenty components.

∴ Total number of squares in the figure = 4 + 4 +4+2+1+1 = 16.
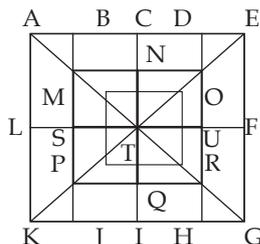
51. (a) *log 50*

   Explanation:

   log 10 – log 5 + log 25

   log 10 + log 25 – log 5

   $\log \frac{10 \times 25^{5}}{1^{-5}} = \log 50$

52. (b) $3\frac{3}{4} : 2 : \sqrt{\pi}$

   Explanation:

T	S	C r
s	x	
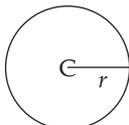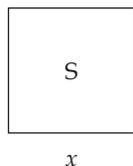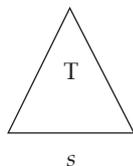
Area of	*Area of*	*Area of*
equilateral△ =	*square* =	*circle*
$\frac{\sqrt{3}}{4} s^2$ =	x^2 =	πr^2
Let $\frac{\sqrt{3}}{4} s^2$ =	x^2 =	$\pi r^2 = k$
$\frac{\sqrt{3}}{4} s^2 = k$	$x^2 = k$	$\pi r^2 = k$
$s^2 = \frac{4}{\sqrt{3}} k$	$x^2 = k$	$r^2 = \frac{k}{\pi}$
$s = \frac{2}{3^{1/4}} \sqrt{k}$	$x = \sqrt{k}$	$r = \frac{\sqrt{k}}{\sqrt{\pi}}$

   Perimeter of equilateral = 3 side

   $\frac{3 \times 2\sqrt{k}}{3^{1/4}} = 3^{3/4} \times 2\sqrt{k}$

   = Perimeter of square = 4 side

   $= 4\sqrt{k}$

   Circumference of circle = 2πr

   $2\pi \frac{\sqrt{k}}{\sqrt{\pi}} = 2\sqrt{\pi} \sqrt{k}$

   Ratio of perimeter of trio=

   $3^{3/4} \times 2\sqrt{k} : 4\sqrt{k} : 2\sqrt{\pi} \sqrt{k}$

   $3^{3/4} : 2 : \sqrt{\pi}$

53. (a) *15999879*

   Explanation:

   a = 4011   *b = 3989*

   ab = 4011 × 3989

   (4000 + 11) (4000 – 11)

   $= 4000^2 – 11^2$

   = 16000000 – 121

   = 15999879

54. (c) *7387*

   Explanation:

   Prime numbers between 80 and 90 = 83, 89

   Product of 83 and 89 = 7387

55. (b) *90*

   Explanation:

   No of tables = 108

   No. of broken tables = $\frac{1}{6}$ *of 108*

   $\frac{1}{6} \times 108 = 18$

   No. of fine tables = 108 – 18 = 90

   No. of chairs = 132

   No. of broken chair = $\frac{1}{4}$ *of 132*

   $\frac{1}{6} \times 132 = 33$ *chairs*

   No. of fine chairs = 132 – 33 = 99 chairs

   Now no. of persons who can work must be 90

56. (d) *597*

   Explanation:

   $99\frac{1}{7} + 99\frac{2}{7} + 99\frac{3}{7} + 99\frac{4}{7} + 99\frac{5}{7} + 99\frac{6}{7}$

   $= 99 \times 6 + \frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \frac{4}{7} + \frac{5}{7} + \frac{6}{7}$

   $= 594 + \frac{21^{3}}{1^{-7}}$

   $= 597$

57. (a) *35*

   Explanation:

   ```
   45) 1000 ( 2
        90
       ----
        100
         90
        ----
         10
   ```

   45 – 10 = 35

   35 must be added to 10 to get it divisible by 45

58. (b) $\frac{b}{5a}$ *hours*

   Explanation:

   Speed = $\frac{Distance}{Time}$

   $= \frac{a}{b} km/h$

   Time taken = $\frac{Distance}{speed} = \frac{200}{1000} \div \frac{a}{b}$

   $= \frac{200^{1}}{1000_{5}} \times \frac{b}{a} = \frac{b}{5}$

59. (b) *54km*

   Explanation:

   Let distance travelled by d km.

   ATQ

   $\frac{d}{9} - \frac{d}{10} = \frac{36}{60}$

   $d \left(\frac{1}{9} - \frac{1}{10} \right) = \frac{36}{60}$

   $d \left(\frac{10 - 9}{90} \right) = \frac{3}{5}$

$$d \times \frac{1}{90} = \frac{3}{5}$$

$$d = \frac{3}{\cancel{5}_1} \times \frac{\cancel{90}^{18}}{1} = 54 \ km$$

60. (c) ₹ 9400

Explanation:

SP of washing machine = ₹6580

Dis% = 30%

Let MP = x

$$Dis = 30\% \ of \ x = \frac{30}{100} \times x$$
$$= \frac{3x}{10}$$

MP – SP = Discount

$$x - 6580 = \frac{3x}{10}$$

$$x - \frac{3x}{10} = 6580$$

$$\frac{7x}{10} = 6580$$

$$x = \cancel{6580}^{940} \times \frac{10}{\cancel{7}_1} = ₹ \ 9400$$

61. (c) ₹1600

Explanation:

CP = ₹1200

gain% = 12%

$$SP = CP \times \left(\frac{100 + gain\%}{100} \right)$$

$$= 1200 \times \left(\frac{100 + 12}{100} \right)$$

$$= 1200 \times \frac{112}{100} = 1344$$

Discount % = 16%

Let MP = ₹ x

$$Discount \ 16\% \ of \ x = \frac{16}{100}x$$

$$x - \frac{16}{100}x = 1344$$

$$\frac{84}{100}x = 1344$$

$$x = \cancel{1344}^{16} \times \frac{100}{\cancel{84}_4}$$

$$= ₹1600$$

62. (a) $\frac{1}{2}$

Explanation:
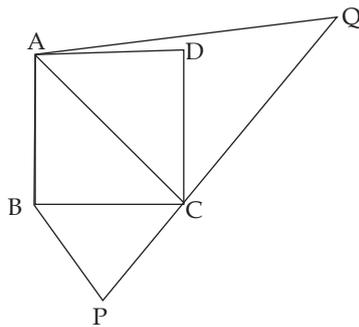
Let side of square be s

In ∆ABC

$$AB^2 + BC^2 = AC^2 \qquad \text{[Pythagoras Theorem]}$$

$$s^2 + s^2 = AC^2$$

$$2s^2 = AC^2$$

$$AC^2 = 2s^2$$

$$AC^2 = (\sqrt{2} \ s)^2$$

$$AC = \sqrt{2} \ s$$

Now ∆PBC ∆ACQ are similar $\left[\begin{array}{l} \text{all equilateral triangles} \\ \text{are similar} \end{array} \right]$

$$\frac{ar(PBC)}{ar(ACQ)} = \frac{BC^2}{AC^2} = \frac{s^2}{(\sqrt{2} \ s)^2}$$

$$\frac{s^2}{2s^2} = \frac{1}{2}$$

$$1 : 2$$

63. (c) 4 : 9

Explanation:
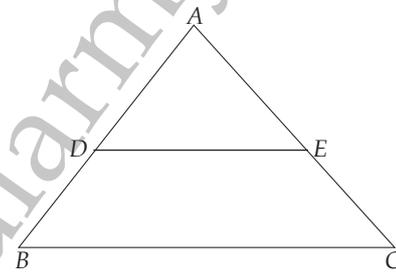

Let AD = 5, DB = 4

AB= 5 + 4 = 9

∆ADE ~ ∆ABC

$$\frac{AD}{AB} = \frac{DE}{BC}$$

$$\therefore \frac{DE}{BC} = \frac{4}{9}$$

64. (c) 180

Explanation:
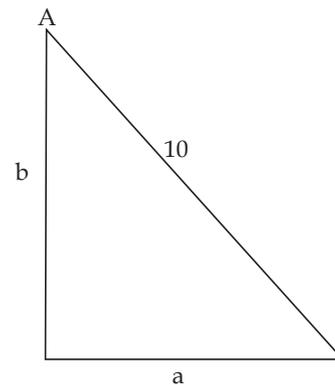
Area of ∆ = 20

$$\frac{1}{2} \times a \times b = 20$$

ab = 40

$$a^2 + b^2 = 10^2 \qquad \text{[Pythagorean Theorem]}$$

$$a^2 + b^2 = 100$$

$$(a + b)^2 = a^2 + b^2 + 2ab$$

$$= 100 + 2 \times 40$$

= 100 + 80

$(a + b)^2 = 180$

65. (a) $\sqrt{2}\,a$

Explanation:
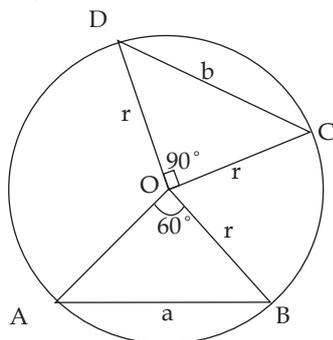
$OA = OB$

OAB is an equilateral triangle

$a = r$ ...(1)

ΔOCD is a right triangle

$OC^2 + OD^2 = DC^2$

$r^2 + r^2 = b^2$

$2r^2 = b^2$

$2a^2 = b^2$ [∴ $r = a$]

$\sqrt{2}\,a = b$

66. (d) $3\sqrt{2}$

Explanation:

$x = 10 + 3\sqrt{11}$

$\dfrac{1}{x} = \dfrac{1}{10 + 3\sqrt{11}} \times \dfrac{10 - 3\sqrt{11}}{10 - 3\sqrt{11}}$

$\dfrac{10 - 3\sqrt{11}}{10^2 - (3\sqrt{11})^2}$

$\dfrac{10 - 3\sqrt{11}}{100 - 99} = \dfrac{10 - 3\sqrt{11}}{1}$

$= 10 - 3\sqrt{11}$

$\left(\sqrt{x} - \dfrac{1}{\sqrt{x}}\right)^2 = \sqrt{x}^2 + \dfrac{1}{\sqrt{x}^2} - 2 \times \sqrt{x} \times \dfrac{1}{\sqrt{x}}$

$\left(\sqrt{x} - \dfrac{1}{\sqrt{x}}\right)^2 = x + \dfrac{1}{x} - 2$

$= 10 + 3\sqrt{11} + 10 - 3\sqrt{11} - 2$

$= 20 - 2 = 18$

$\left(\sqrt{x} - \dfrac{1}{\sqrt{x}}\right)^2 = (3\sqrt{2})^2$

$= \sqrt{x} - \dfrac{1}{\sqrt{x}} = 3\sqrt{2}$

67. (b) −2

Explanation:

$a + b + c = 0$

squaring both sides

$(a + b + c) = 0$

$a^2 + b^2 + c^2 + 2ab + 2bc + 2ca = 0$

$a^2 + b^2 + c^2 = -2ab - 2bc - 2ca$

$a^2 + b^2 + c^2 = -2(ab + bc + ca)$

$\dfrac{a^2 + b^2 + c^2}{ab + bc + ca} = \dfrac{-2}{1}$

68. (c) 27

Explanation:

$a - 6b = 3$

cubing both sides

$(a - 6b)^3 = 3^3$

$a^3 - 216b^3 - 3 \times a \times 6b\,(a - 6b) = 27$

$a^3 - 216b^3 - 18ab \times 3 = 27$

$a^3 - 216b^3 - 54ab = 27$

69. (d) 1

Explanation:

$\dfrac{\sin\theta\ \mathrm{cosec}\theta\ \tan\theta\ \cot\theta}{\sin^2\theta + \cos^2\theta}$

$\dfrac{\sin\theta \times \dfrac{1}{\sin\theta} \times \tan\theta \times \dfrac{1}{\tan\theta}}{1}$

$= \dfrac{1}{1} = 1$

70. (b) $a^2 + b^2 = p^2 + q^2$

Explanation:

$a\cos\theta + b\sin\theta = p$ ...(1)

$a\cos\theta - b\sin\theta = q$ ...(2)

squaring and adding (1) & (2)

$(a\cos\theta + b\sin\theta)^2 + (a\cos\theta - b\sin\theta)^2 = p^2 + q^2$

$= a^2\cos^2\theta + b^2\sin^2\theta + 2ab\sin\theta\cos\theta + a^2\sin^2\theta + b^2\cos^2\theta - 2ab\sin\theta\cos\theta = p^2 + q^2$

$= a^2(\cos^2\theta + \sin^2\theta) + b^2(\sin^2\theta + \cos^2\theta) = p^2 + q^2$

$= a^2(1) + b^2(1) = p^2 + q^2$

$a^2 + b^2 = p^2 + q^2$

71. (a) 10ft.

Explanation:

$AB = 15ft$

Let $AC = DC = x$

then $BC = 15 - x$

In ΔDCB

$\dfrac{BC}{DC} = \sin 30°$

$\dfrac{15 - x}{x} = \dfrac{1}{2}$

$2(15 - x) = x$

$30 - 2x = x$

$30 = 3x$
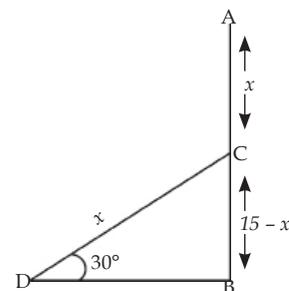
$3x = 30$

$x = \dfrac{\overset{10}{\cancel{30}}}{\underset{1}{\cancel{3}}}$

$x = 10ft$

72.　(c) 415.68m.

Explanation:
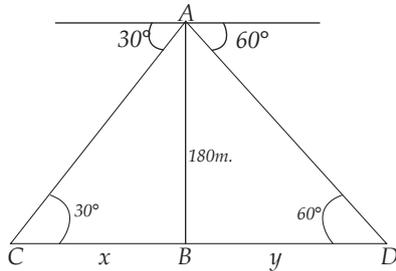
Let C and D be the portions of two ships.

Let CB = x

and BD = y

In ΔABC

$\dfrac{AB}{BC} = \tan 30°$

$\dfrac{180}{x} = \dfrac{1}{\sqrt{3}}$

$x = 180\sqrt{3}$

In ΔABD

$\dfrac{AB}{BD} = \tan 60°$

$\dfrac{180}{y} = \sqrt{3}$

$\sqrt{3}y = 180$

$y = \dfrac{180}{\sqrt{3}} = \dfrac{180}{\sqrt{3}} \times \dfrac{\sqrt{3}}{\sqrt{3}} = 60\sqrt{3}$

$CD = x + y$

$= 180\sqrt{3} + 60\sqrt{3}$

$= 240\sqrt{3}$

$= 240 \times 1.732 = 415.68m.$

73.　(d) 8, 9

Explanation:
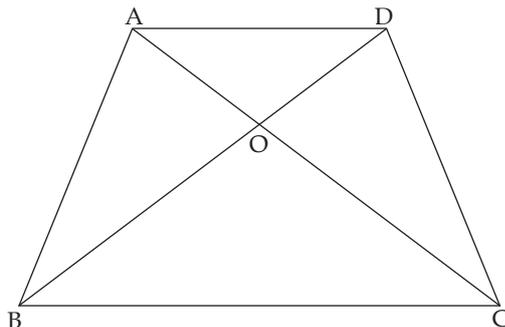
ABCD is trapezium

$\dfrac{AO}{OC} = \dfrac{DO}{OB}$

$\dfrac{3}{x-3} = \dfrac{x-5}{3x-19}$

$3(3x-19) = (x-3)(x-5)$

$9x - 57 = x^2 - 8x + 15$

$0 = x^2 - 17x + 72$

$x^2 - 17x + 72 = 0$

$x^2 - 8x - 9x + 72 = 0$

$x(x-8) - 9(x-8) = 0$

$(x-8)(x-9) = 0$

$x = 8, x = 9$

$x = 8, 9$

74.　(d) 9cm.

Explanation:

$r = \dfrac{s}{2\sqrt{3}}$

$3 = \dfrac{s}{2\sqrt{3}}$

$s = 6\sqrt{3}$
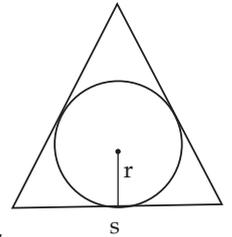
Median of equilateral $\Delta = \dfrac{\sqrt{3}}{2}$ *side*

$\dfrac{\sqrt{3}}{\underset{1}{\cancel{2}}} \times \overset{3}{\cancel{6}}\sqrt{3} = 9cm.$

75.　(d) $\dfrac{1}{2}$

Explanation:

$\dfrac{2.75 \times 2.75 \times 2.75 - 2.25 \times 2.25 \times 2.25}{2.75 \times 2.75 + 2.75 \times 2.25 + 2.25 \times 2.25}$

$= \dfrac{2.75^3 - 2.25^3}{2.75^2 + 2.75 \times 2.25 + 2.25^2}$

$= \dfrac{(2.75 - 2.25)\;\cancel{(2.75^2 + 2.25^2 + 2.75 \times 2.25)}}{\cancel{2.75^2 + 2.75 \times 2.25 + 2.25^2}}$

$= 0.50 = \dfrac{\overset{1}{\cancel{50}}}{\underset{2}{\cancel{100}}} = \dfrac{1}{2}$

76.　(a) $1+2\sqrt{3}$

Explanation:

$x = 1 + \sqrt{2} + \sqrt{3}$

$x - 1 = \sqrt{2} + \sqrt{3}$

$\dfrac{1}{x-1} = \dfrac{1}{\sqrt{3}+\sqrt{2}} = \dfrac{1}{\sqrt{3}+\sqrt{2}} \times \dfrac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}$

$\dfrac{\sqrt{3}-\sqrt{2}}{\sqrt{3}^2-\sqrt{2}^2}$

$= \dfrac{\sqrt{3}-\sqrt{2}}{3-2} = \sqrt{3}-\sqrt{2}$

$x + \dfrac{1}{x-1} = 1 + \sqrt{2} + \sqrt{3} + \sqrt{3} - \sqrt{2}$

$1 + 2\sqrt{3}$

77. (b) 2km/h.

Explanation:

Let speed of current x km/h.

speed of boat in still water = 4x km/h.

speed of boat upstreams = 4x–x=3xkm/h.

speed of boat downstreams = 4x+x = 5xkm/h.

ATQ

$$= \frac{30}{3x} + \frac{30}{5x} = 8$$

$$= \frac{30}{x}\left(\frac{1}{3} + \frac{1}{5}\right) = 8$$

$$= \frac{30}{x} \times \frac{8}{15} = 8$$

$$= 240 = 15 \times 8 \times x$$

$$x = \frac{\cancel{240}^2}{\cancel{15 \times 8}_1} = 2$$

$$x = 2$$

speed of current = 2km/h.

78. (d) 2

Explanation:

Let speed of boat in still water = xkm/h.

speed of current = y km/h.

$$x+y = 12 \qquad \qquad .....(1)$$

$$x–y = 8 \qquad \qquad .....(2)$$

adding (1) & (2)

$$
\begin{array}{rcl}
x + \cancel{y} & = & 12 \\
x \,\cancel{-}\, y & = & 8 \\
\hline
2x & = & 20 \\
\end{array}
$$

$$x = 10$$

$$10 + y = 12$$

$$y = 2$$

79. (d) 9 days

Explanation:

Janardan can complete whole work in $= \cancel{10}^5 \times \frac{3}{\cancel{2}_1} = 15$ days

1 work is done in = 15 days

$\frac{3}{5}$ *work is done in* $= \cancel{15}^3 \times \frac{3}{\cancel{5}_1} = 9$ days

80. (c) 24 days

Explanation:
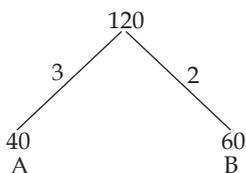
A can do whole work in $= 10 \times \frac{4}{1} = 40$ days

B can do whole work $= 20 \times \frac{3}{1} = 60$ days

Let total units of at work = 120 (LCM of 40 and 60)

No. of days taken if they work together $= \frac{120}{3+2} = \frac{\cancel{120}^{24}}{\cancel{5}_1}$

$= 24$ days

81. (b) 60

Explanation

volume of water $= \frac{1}{\cancel{4}_1} \times \cancel{240}^{60} = 60cc$

volume of glycerin $= \frac{3}{\cancel{4}_1} \times \cancel{240}^{60} = 180cc.$

ATQ

$\frac{60 + x}{180} = \frac{2}{3}$ *[Let x cc water is added]*

$$3(60 + x) = 180 \times 2$$

$$180 + 3x = 360$$

$$3x = 360 – 180$$

$$3x = 180$$

$$x = \frac{\cancel{180}^{60}}{\cancel{3}_1} = 60$$

82. (c) ₹306.04

Explanation

Principal = ₹ 5000

Rate = 8% = $\frac{\cancel{8}^2}{\cancel{4}_1} = 2\%$

Time = 9 months = 9 × 4 = 36 month = 3years

[Note when interest is calculated quarterly, rate become one fourth and time becomes four times]

Amount = $P \left(1 + \frac{R}{100}\right)^T$

$$5000 \left(1 + \frac{2}{100}\right)^3$$

$$\cancel{5000} \times \frac{102}{100} \times \frac{\cancel{102}^{51}}{\cancel{100}} \times \frac{102}{100} = 5306.04$$

compound interest = A–P

$$= ₹5306.04 – ₹5000$$

$$= ₹306.04$$

83. (a) $1\frac{1}{2}$ *years*

Explanation

P = ₹ 800

R = 10% = 5%

Let time be t years

[Note 2 when interest is calculated semiannually time becomes double and rate becomes half.]

$$P \left(1 + \frac{R}{100}\right)^T = A$$

$$800 \left(1 + \frac{8}{100}\right)^{2t} = 926.10$$

$$\left(\frac{21}{20}\right)^{2t} = \frac{926.10}{800}$$

$$\left(\frac{21}{20}\right)^{2t} = \frac{9261}{8000}$$

$$\left(\frac{21}{20}\right)^{2t} = \left(\frac{21}{20}\right)^{3}$$

$2t = 3$

$t = \frac{3}{2}$ years $= 1\frac{1}{2}$ years

84.   (c) *360*

Explanation

$MP = ₹500$

$SP = 500\left(\frac{100-20}{100}\right)\left(\frac{100-10}{100}\right)$

$\cancel{500} \times \frac{80}{100} \times \frac{90}{100} = 360$

85.   (d) *₹ 80000*

Explanation

Let CP = ₹x

loss % = 20%

loss = 20% of x

$\frac{\cancel{20}}{\cancel{100}_5} \times x = \frac{x}{5}$

$x - \frac{x}{5} = 64000$

$\frac{4x}{5} = 64000$

$x = \cancel{64000}^{16000} \times \frac{5}{\cancel{4}_1}$

$x = ₹\ 80000$

86.   (d) 90°

Explanation
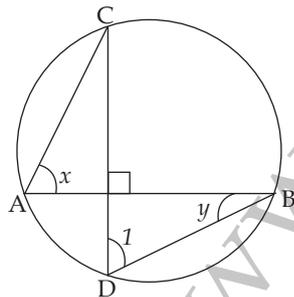
$x = \angle 1$ *[Angles subtended in same segment]*

In EDB

$\angle 1 + y + 90° = 180°$ *[sum of angles of is 180°]*

$x + y + 90° = 180°$

$x + y = 180° - 90°$

$x + y = 90°$

87.   (b) 3.75cm.

Explanation
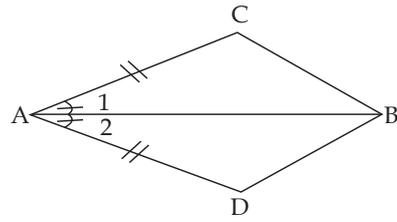
In ΔABC & ΔABD

AB = AB (common)

∠1 = ∠2 (given)

AC = AD(given)

∴ ΔABC ≅ ΔABD (SAS congruence rule)

BC = BD (CPCT)

$2BD + \frac{BC}{2} = 2BC + \frac{BC}{2}$

$= \frac{5BC}{2} = \frac{5}{2} \times 1.5$

$= \frac{7.5}{2} = 3.75cm.$

88.   (d) *100*

Explanation

In ΔORT

$a+b+140° = 180°$ *[sum of angles of is 180]*

$a+b = 40°$

In ΔRST

$2a + 2b + x = 180°$

$2(a+b)+x = 180°$

$2×40° + x = 180°$

$80° + x = 180°$

$x = 180° - 80°$

$= 100°$
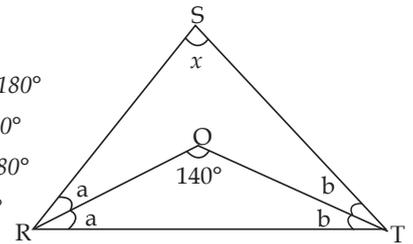
89.   (d) *1*

Explanation

(k–2, k+1) is a solution of 2x + 3y = 4

$2(k-2) + 3(k+1) = 4$

$2k - 4 + 3k + 3 = 4$

$5k-1 = 4$

$5k = 4+1$

$5k = 5$

$k = 1$

90.   (c) *–2*

Explanation

(a,4) lies on x+2y = 6

$a + 2 × 4 = 6$

$a + 8 = 6$

$a = 6 - 8$

$a = -2$

91. (d) $2(\sqrt{2}-1)$

Explanation:

$$\frac{1}{\sqrt{5}+2} + \frac{1}{\sqrt{6}+\sqrt{5}} + \frac{1}{\sqrt{7}+\sqrt{6}} + \frac{1}{\sqrt{2}+\sqrt{5}}$$

$$= \frac{\sqrt{5}-2}{(\sqrt{5}+2)(\sqrt{5}-2)} + \frac{\sqrt{6}-\sqrt{5}}{(\sqrt{6}+\sqrt{5})(\sqrt{6}-\sqrt{5})} + \frac{\sqrt{7}-\sqrt{6}}{(\sqrt{7}+\sqrt{6})(\sqrt{7}-\sqrt{6})} + \frac{\sqrt{8}-\sqrt{7}}{(\sqrt{8}+\sqrt{7})(\sqrt{8}-\sqrt{7})}$$

$$= \frac{\sqrt{5}-2}{5-4} + \frac{\sqrt{6}-\sqrt{5}}{6-5} + \frac{\sqrt{7}-\sqrt{6}}{7-6} + \frac{\sqrt{8}-\sqrt{7}}{8-7}$$

$$= \sqrt{5}-2 + \sqrt{6}-\sqrt{5} + \sqrt{7}-\sqrt{6} + \sqrt{8}-\sqrt{7}$$

$$= -2+\sqrt{8} = 2\sqrt{2}-2 = 2(\sqrt{2}-1)$$

92. (a) ₹ 96.28

Explanation

25cm.

24cm.
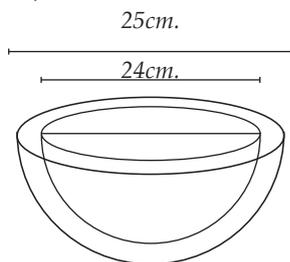
Surface area to be painted =

Inner CSA + Outer CSA + thickness

$$2\pi r^2 + 2\pi R^2 + \pi R^2 - \pi r^2$$

$$= 3\pi R^2 + \pi r^2$$

$$\pi(3R^2 + r^2)$$

$$\frac{22}{7} \times \left(3 \times \left(\frac{25}{2}\right)^2 + \left(\frac{24}{2}\right)^2\right)$$

$$\frac{22}{7}\left(3 \times \frac{625}{4} + 144\right)$$

$$\frac{22}{7}\left(\frac{1875 + 576}{4}\right)$$

$$\frac{22}{7} \times \frac{2451}{4_2} = \frac{26961}{14}\ cm^2$$

If cost of painting on 1 cm^2 = ₹ 0.05

Then cost of painting on $\frac{26961}{14} = \frac{5}{100} \times \frac{26961}{14}$

$$= ₹\ 96.28$$

93. (c) 0,1

Explanation:

$$a + \sqrt{5}b = \frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}}$$

$$= \frac{(7+3\sqrt{5})(3-\sqrt{5}) - (7-3\sqrt{5})(3+\sqrt{5})}{(3+\sqrt{5})(3-\sqrt{5})}$$

$$\frac{(21-7\sqrt{5}+9\sqrt{5}-15) - (21+7\sqrt{5}-9\sqrt{5}-15)}{9-5}$$

$$\frac{(6+2\sqrt{5}) - (6-2\sqrt{15})}{4}$$

$$a+\sqrt{5}b = \frac{6+2\sqrt{5} - 6+2\sqrt{5}}{4}$$

$$a+\sqrt{5}b = \frac{4\sqrt{5}}{4}$$

$$a = 0\ b = 1$$

94. (b) 554.4m²

Explanation:

radius = 2.1m.

height = 21m.

curved surface area = $2\pi rh$

$$2 \times \frac{22}{7} \times \frac{21}{10} \times 21 = 277.2\ cm^2$$

CSA of 2 pillars = 277.2 × 2

$$= 554.4m^2$$

21m.

2.1cm.
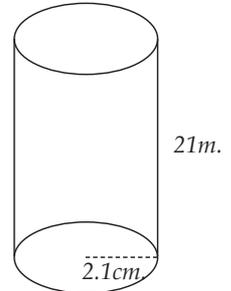
95. (d) 43.75%

Explanation:

100

75
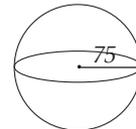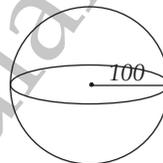
Let radius of sphere = 100

CSA of sphere = $4\pi(100)^2$

New radius = 100 – 25 = 75

New CSA = $4\pi(75)^2$

% decreases = $\frac{4\pi(100)^2 - 4\pi(75)^2}{4\pi \times (100)^2} \times 100$

$$= \frac{100^2 - 75^2}{100^2} \times 100$$

$$= \frac{175 \times 25}{10000} \times 100 = 43.75\%\ [a^2 - b^2 = (a + b)(a - b)]$$

96. (d) 6

Explanation:

sides of are

x, x+1 and 2x–1

$$s = \frac{x+x+1+2x-1}{2}$$

$$\frac{4x}{2} = 2x$$

Area of triangle =

$$\sqrt{s(s-a)(s-b)(s-c)} \qquad [Heron's\ formula]$$

$$= \sqrt{2x(2x-x)(2x-(x+1))(2x-1)}$$

$$= \sqrt{2x \times x \times (x-1) \times (1)}$$

$$= x\sqrt{2(x-1)}$$

Now ATQ

$x\sqrt{2(x-1)} = x\sqrt{10}$

Squaring both sides

$2(x-1) = 10$

$x-1 = 5$

$x = 6$

97. (d) $\dfrac{xy}{x+y}$

Explanation:

$(x^{-1} + y^{-1})^{-1}$

$\left(\dfrac{1}{x} + \dfrac{1}{y}\right)^{-1}$

$\left(\dfrac{y+x}{xy}\right)^{-1} = \dfrac{xy}{x+y}$

98. (c) $2+\sqrt{3}$

Explanation:

$\sqrt{7 + \sqrt{48}}$

$= \sqrt{7 + 4\sqrt{3}}$

$= \sqrt{7 + 2\times2\sqrt{3}}$

$= \sqrt{4+3 + 2\times2\sqrt{3}}$

$= \sqrt{2^2 + \sqrt{3}^2 + 2\times2\sqrt{3}}$

$= \sqrt{(2 + \sqrt{3})^2}$

$= 2+\sqrt{3}$

99. (d) 1

Explanation:

$Px = x^2 - 2\sqrt{2x} + 1$

$P(2\sqrt{2}) = (2\sqrt{2})^2 - 2\sqrt{2}\,(2\sqrt{2}) + 1$

$= 8 - 8 + 1 = 1$

100. (d) 36

Explanation:

Let x and $\dfrac{3}{2}x$ are complementary angles

$x + \dfrac{3}{2}x = 90^o$

$\dfrac{5}{2}x = 90^o$

$x = \cancel{90}^{18} \times \dfrac{2}{\cancel{5}_1} = 36^o$

smaller angle = $x = 36^o$

(A1)

Max Time : 2 Hours   (Please Read The Instructions Carefully)   Max Marks : 100

Roll No………………………..   **INSTRUCTIONS**

1. Paper 2 has two parts: Part I & Part II

   (a) Part I : General Knowledge (50 marks)

   (b) Part II: English (50 marks)

2. Each section carries 50 objectives type of questions.

3. There will be four possible answers to every question. Candidates are required to fill correct answer in the OMR sheet with Black ball pen only.

4. For each correct answer, 1 mark will be granted and 0.5 mark will be deducted for every wrong answer.

5. If a candidate gives more than one answer, it will be treated as a wrong answer and 0.5 mark will be deducted. There will be no penalty for questions left unanswered.

6. Candidates should not mark in the question paper. They can use blank pages provided in the question paper for rough work.

7. To be eligible to qualify, a candidate must obtain minimum 40% marks each in Section I & II separately and a minimum of 50% aggregate in total.

PART–1 : GENERAL KNOWLEDGE

Q1. Light Emitting Diode (LED) converts
(a) light energy into electrical energy
(b) electrical energy into light energy
(c) thermal energy into light energy
(d) mechanical energy into electrical energy

Q2. By what mechanism does scent spread all over the room if the lid is opened?
(a) Pressure in the bottle
(b) Compression from the bottle
(c) Diffusion
(d) Osmosis

Q3. When deep sea fishes are brought to the surface of the sea, their bodies burst. This is because the blood in their bodies flows at very
(a) high speed
(b) high pressure
(c) low speed
(d) low pressure

Q4. In step-down transformer, the AC output gives the
(a) current more than the input current
(b) current less than the input current
(c) current equal to the input current
(d) voltage more than the input voltage

Q5. Vermicompost is an/a
(a) inorganic fertilizer
(b) toxic substance
(c) organic bio fertilizer
(d) synthetic fertilizer

Q6. What is the main constituent of a pearl?
(a) Calcium carbonate and magnesium carbonate
(b) Calcium sulphate only
(c) Calcium oxide and calcium sulphate
(d) Calcium carbonate only

Q7. Gypsum ($CaSO_4.2H_2O$) is added to clinker during cement manufacturing to
(a) decrease the rate of setting of cement
(b) bind the particles of calcium silicate
(c) facilitate the formation of colloidal gel
(d) impart strength to cement

Q8. Contact lenses are made from
(a) polyvinyl chloride
(b) polystyrene
(c) lucite
(d) teflon

Q9. People suffering from 'anorexia nervosa'
(a) develop paralysis
(b) show poor reflex
(c) cannot speak properly
(d) eat very little and fear gaining weight

Q10. Genetic screening is
(a) analysis of DNA to check the presence of a particular gene in a person
(b) analysis of gene in a population
(c) pedigree analysis
(d) screening of infertility in parents

Q11. In human digestive system, the process of digestion starts in
(a) Oesophagus (b) Buccal cavity (c) Duodenum (d) Stomach

Q12. Which of the following structures of a plant is responsible for transpiration?
(a) Xylem (b) Root (c) Stomata (d) Bark

Q13. After the death of Raja Rammohan Roy, the Brahmo Samaj split into two sections; the Brahmo Samaj of India and the Adi Brahmo Samaj. Who were the leaders of the two sections, respectively?
(a) Keshab Chandra Sen and Debendranath Tagore
(b) Radhakanta Deb and Debendranath Tagore
(c) Keshab Chandra Sen and Radhakanta Deb
(d) Debendranath Tagore and Radhakanta Deb

Q14. Fa-Hien's mission to India was to
(a) learn about the administrative system of the Gupta kings
(b) understand the social position of women during the Gupta period
(c) visit the Buddhist institutions and to collect copies of Buddhist manuscripts
(d) get full knowledge about the condition of peasants during the period of Gupta kings

Q15. The Doctrines of 'Non-Violence' and 'Civil Disobedience' associated with Mahatma Gandhi were influenced by the works of
(a) Churchill-Irwin-Tolstoy (b) Ruskin-Tolstoy-Thoreau
(c) Thoreau-Humen-Shaw (d) Cripps-Tolstov-Howes

Q16. Who among the following was elected as the President All India Khilafat Conference met at Delhi in 1919?
(a) Motilal Nehru (b) Mahatma Gandhi (c) M Ali Jinnah (d) Shaukat Ali

Q17. Who among the following has started the Public Works Department in India in AD 1848?
(a) Lord William Bentinck (b) Lord Dalhousie (c) Lord Wellesley (d) Lord Cornwallis

Q18. Who among the following was thrice elected President of the Indian National Congress?
(a) Dadabhai Naoroji (b) Surendranath Banerjee (c) Gopal Krishna Gokhl (d) Shankaran Nair

Q19. The Buddha delivered his first sermon, known as 'Turning of the wheel of law' at
(a) Sanchi (b) Sarnath (c) Sravasti (d) Bodh Gaya

Q20. Which one among the following is called terrestrial planet?
(a) Mercury (b) Jupiter (c) saturn (d) Uranus

Q21. Sargasso sea is characterised by
(a) very cold water (b) very warm water (c) highly saline water (d) typical marine vegetation

Q22. Ozone holes are more pronounced at the
(a) Equator (b) Tropic of Cancer (c) Tropic of Capricorn (d) Poles

Q23. In absorption of insolation, the most significant part is
(a) carbon dioxide (b) ozone (c) oxygen (d) haze

Q24. Why do we have a leap year every four years?
(a) The Earth gets shifted out of orbit every four year (b) The revolution slows down a little once every four years
(c) The length of a year is not an integer number of days (d) It is a convention

Q25. Rain bearing clouds look black because
(a) all light is scattered by them
(b) the large number of water droplets in them absorb all the sunlight
(c) they reflect the sunlight back into the atmosphere
(d) there is a lot of dust

Q26. Lack of atmosphere around the Moon is due to
(a) low escape velocity of air molecule and low gravitational attraction
(b) high escape velocity of air molecule and low gravitational attraction
(c) low gravitational attraction only
(d) high escape velocity of air molecule only

Q27. The impeachment of the President of India can be initiated in
(a) either house of the Parliament (b) a joint siting of both houses of the Parliament
(c) the Lok Sabha alone (d) the Rajya Sabha alone

Q28. The core of political democracy lies in the basic axiom of electoral democracy which is based on
(a) Right to education (b) Freedom of speech (c) Right to equality (d) Universal adult franchise

Q29. Zero Hour in the Indian Parliament starts at
(a) first hour of the sitting (b) last hour of the sitting (c) 12:00 noon (d) no fixed timings

Q30. 32.Who among the following Indian Prime Ministers resigned before facing a vote of no-confidence in the Lok Sabha?
(a) Chandra Shekhar
(b) Morarji Desai
(c) Chaudhary Charan Singh
(d) VP Singh

Q31. Which one of the following are a human right as well as a Fundamental Rights under the Constitution of India?
(a) Right to Information
(b) Right to Education
(c) Right to Work
(d) Right to Housing

Q32. The function of a Protem Speaker is to
(a) conduct the proceeding of the House in the absence of the Speaker
(b) officiate as Speaker when the Speaker is unlikely to be elected
(c) swear members and hold charge till a regular Speaker is elected
(d) scrutinize the authenticity of the election certificates of members

Q33. 35.In India the Supreme Command of the Armed Forces is, vested in the President. This means that in the exercise of this power
(a) he/she cannot be regulated by law
(b) he/she shall be regulated by law
(c) during war, the President seeks advice only from the Chiefs of the Armed Forces
(d) during war the President can suspended the Fundamental Rights of citizens

Q34. The value of money varies
(a) directly with the, interest rate
(b) directly with the price level
(c) directly with the volume of employment
(d) inversely with the price level

Q35. Corporation tax is imposed by
(a) State Government
(b) Central Government
(c) Local Government
(d) State as well as Central Government

Q36. Fiscal Policy in India is formulated by
(a) the Reserve Bank of India
(b) the Planning Commission
(c) the Finance Ministry
(d) the Securities and Exchange Board of India

Q37. Who has test-fired the indigenously developed Helina & Dhruvastra missile system?
(a) DRDO
(b) ISRO
(c) NASA
(d) ASMI

Q38. DRDO has conducted the first-ever test firing of the Akash-NG missile successfully. What is the type of the missile?
(a) Surface-to-Surface
(b) Air-to-Surface
(c) Surface-to-Air
(d) Air-to-Air

Q39. The India's combat drone system is being developed under which project?
(a) Project Mogul
(b) FMA SAIA 90
(c) CATS
(d) Project Blue Book

Q40. Which cricket ground is known as the "Home of Cricket"?
(a) Melbourne Cricket Ground
(b) Eden Park Cricket Ground
(c) Adelaide Oval Cricket Ground
(d) Lord's Cricket Ground

Q41. Who is the first Indian woman to win an Olympic medal?
(a) Saina Nehwal
(b) Mary Kom
(c) P.V. Sindhu
(d) Karnam Malleswari

Q42. Who became the first Indian women cricketer to score 10,000 runs across all formats?
(a) Smriti Mandana
(b) Mithali Raj
(c) Deepthi Sharma
(d) Harampreeth Kaur

Q43. 20. Nethra Kumanan, who was in news recently, is the first Indian woman to qualify for which sport in the Tokyo Olympics?
(a) Weight Lifting
(b) Sailing
(c) Fencing
(d) Table Tennis

Q44. Internal Security Academy is located at
(a) Nashik
(b) Mount Abu
(c) Hyderabad
(d) Pune

Q45. Sabin Award is given for the conservation of
(a) Amphibians
(b) Reptiles
(c) Brids
(d) Coral

Q46. Which country has unveiled a draft "Humans in space policy 2021"?
(a) Japan
(b) India
(c) China
(d) USA

Q47. Which state has recently come out with a 'Caravan tourism' policy?
(a) Andhra Pradesh
(b) Tamil Nadu
(d) Uttar Pradesh
(d) Maharashtra

Q48. Trade Policy Review (TPR), which was making news recently, is associated with which organisation?
(a) World Bank
(b) WTO
(c) IMF
(d) FAO

Q49. From which Indian organization, the four personnel have been selected for training in Russia for the Gaganyaan Mission, that is going to be launched in 2022?
(a) ISRO
(b) IAF
(c) MARCOS
(d) Indian Navy

Q50. Bhadravati Rapid Action Force (RAF) unit, which was making news recently, is the first such unit of which state?
(a) Telangana
(b) Karnataka
(c) Kerala
(d) Odisha

PART–II : ENGLISH

Analyze the content of the passage and then answer the questions that follow passage.

Until the end of his first year at school, Cyril retained many of the pleasures and pursuits he had brought with him from home, and he kept an old interest in butterflies and fossils. His grandmother had presented him with a fine bird's eggs cabinet, but he could never bring himself to risk in climbing trees. Once or twice he dissected dead birds from sheer determination to overcome his horror of the operation. Probably it was his envy of those physically unlike himself that brought on a phase during which he drew massive athletes with thick necks and square shoulders. Again he was pitying himself for what he could never be.

Q51. The reason Why Cyril made drawings of athletes was that
(a) though he admired them, he lacked a fine physique himself
(b) he loved violent exercises
(c) athletics was a passion with him
(d) he had to complete an assignment

Q52. Cyril dissected dead birds to
(a) see if he would like to become a doctor
(b) please his grandmother
(c) satisfy his curiosity
(d) overcome the fear of act

Q53. Until the end of first year, Cyril retained his interest in
(a) bird's eggs
(b) butterflies and fossils
(c) dissecting bird's
(d) drawing pictures of athletes

Q54. Cyril did not want to climb trees because he
(a) loved to play on the ground
(b) was scared of falling down
(c) disliked trees
(d) thought it was childish

Q55. Cyril's early schooling was in some ways like home life because
(a) he had all his old friends with him
(b) the food and the climate were same as at home
(c) he kept an doing what gave joy and recreation at home
(d) his family visited him often

Choose the word which best expresses nearly the same meaning of the given word.

Q56. ENCOMIUM
(a) Verve
(b) Eulogy
(c) Doggerel
(d) Force

Q57. PARLEY
(a) Discuss
(b) Deliver
(c) Sweeten
(d) Race

Q58. BROWBEAT
(a) Ambitious
(b) Challenging
(c) Intimidate
(d) Tarnish

Q59. WAIVE
(a) Restrict
(b) Relax
(c) Permit
(d) Admit

Q60. AMICABLE
(a) Nebulous
(b) Abominable
(c) Harmonious
(d) Delicate

In each of the following question, out of the given words, one word is mis-spelt. Find the mis-spelt word.

Q61. (a) Benificcial
(b) Beneficial
(c) Baneficial
(d) Baneficial

Q62. (a) Comitment
(b) Comitmment
(c) Commitment
(d) Comittment

Q63. (a) Dependant
(b) Dependent
(c) depandant
(d) Dipendent

Choose the word which best expresses the opposite meaning of the word.

Q64. REPRIMAND
(a) Reward
(b) Appreciate
(c) Encourage
(d) Praise

Q65. BOISTEROUS
(a) Serene
(b) Tumultuous
(c) Brazen
(d) Opaque

Q66. GRAVE
(a) Noble
(b) Inconsequential
(c) Solemn
(d) Senile

Q67. SEDENTARY
(a) Vivid
(b) Afraid
(c) Indolent
(d) Active

Q68. GRADUAL
(a) Energetic
(b) Dynamic
(c) Rapid
(d) Enthusiastic

Fill up the blanks with the most appropriate word from the option given below.

Q69. In spite of her other_____, Kasthuri still managed to find time for her hobbies.
(a) occupations   (b) preoccupations   (c) predilections   (d) business

Q70. The official_____ the Chief Minister of the situation in the town.
(a) apprised   (b) informed   (c) appraised   (d) asked

Q71. The last _____ were performed before the body was cremated.
(a) rites   (b) writes   (c) rights   (d) withers

Q72. Happiness consists in being _____what we have.
(a) contented to   (b) contented with   (c) contented for   (d) contented in

Q73. He became the Governor of a Province _____.
(a) by and large   (b) in the course of time (c) at times   (d) little by little

In each of the following sentences find out which part of the sentence has an error.

Q74. If the police would have worked (a)/ in time (b)/ the riot would not have occurred. (c)/ No error (d)/

Q75. It is time you (a)/ decide on your next (b)/ course of action. (c)/ No error (d)/

Q76. Each of them (a)/ have a different version (b)/ of the crime. (c)/ No error (d)/

Q77. What made him to do it (a)/ or who provoked him (b)/ is still not known. (c)/ No error (d)/

Q78. Despite of continuing pain (a)/ she worked at her temporary job (b)/ most of the week. (c)/ No error (d)/

Choose the best expression amongst multiple choices for a given idiom/proverb.

Q79. I jumped out of my skin when the explosion happened
(a) was angry   (b) was in panic   (c) was excited   (d) was nervous

Q80. He had to cool his heels before he could get an appointment with the doctor.
(a) to exercise influence (b) to lose one's temper (c) to be kept waiting (d) to make publicly known

Q81. The captains of the rival teams should try to bury the hatchet.
(a) win the game   (b) forget the past (c) put up a stiff competition(d) make peace

Q82. He stopped at the bar to wet his whistle.
(a) have a problem   (b) have a drink   (c) have a nap   (d) be happy

In each of the following question out of the four alternatives, choose the one which can be substitute for the given word/ sentence.

Q83. Words inscribed on tomb
(a) Epitome   (b) Epistle   (c) Epilogue   (d) Epitaph

Q84. One who eats everything
(a) Omnivorous   (b) Omniscient   (c) Irrestible   (d) Insolvent

Q85. Malafide case is one
(a) Which is undertaken in a good faith   (b) Which is undertaken in a bad faith
(c) Which is undertaken after a long delay   (d) Which is not undertaken at all

In these questions, the first and last sentences of the passage are numbered 1 and 6. The rest of passage is split into four parts and named P, Q, R and S. These four parts are not given in their proper order. Read the sentence and find out which of the four combinations is correct.

Q86. S1: On vacation in Tangier, Morocco, my friend and I sat down at a street cafe.
P : At one point, he bent over with a big smile, showing me, a single gold tooth and a dingy fez.
Q : soon I felt the presence of someone standing alongside me.
R : But this one wouldn't budge.
S : We had been cautioned about beggars and were told to ignore them.
S6: Finally a man walked over to me and whispered, "Hey buddy this guy is your waiter and he wants your order".
The Proper sequence should be:
(a) SQRP   (b) SQPR   (c) QSRP   (d) QSPR

Q87. S1: And then Gandhi came.
P : Get off the backs of these peasants and workers, he told us, all you who live by their exploitation.
Q : He was like a powerful current of fresh air, like a beam of light, like a whirlwind that upset many things.
R : He spoke their language and constantly dre their attention to their appalling conditions.
S : He didn't descent from the top, he seemed to emerge from the masses of India.

S6: Political freedom took new shape and then acquired a new content.
The Proper sequence should be:

(a) QSRP   (b) SRQP   (c) RSQP   (d) PRSQ

Q88. S1: Biological evolution has not fitted man to any specific environment.
P : It is by no means a biological evolution, but it is a cultural one.
Q : His imagination, his reason, his emotional subtlety and toughness, makes it possible for him not to accept the environment but to change.
R : And that series of inventions by which man from age by age has reshaped his environment is a different kind of evolution.
S : Among the multitude of animals which scamper, burrow swim around us he is in the only one who is not locked in to his environment.
S6: That brilliant sequence of cultural peaks can most appropriately be termed the ascent of man.
The Proper sequence should be:

(a) QPRS   (b) SRQP   (c) QRSP   (d) SQRP

Q89. S1: The dictionary is the best friend of you task. P : That may not be possible always.
Q : It is wise to look it up immediately.
R : Then it must be firmly written on the memory and traced at the first opportunity.
S : Never allow a strange word to pass unchallenged.
S6: soon you will realize that this is an exciting task.
The Proper sequence should be:

(a) PQRS   (b) SPQR   (c) QRPS   (d) SQPR

For Underlined part of the sentence chooses part of the sentence from given choices, to correct or improve it.

Q90. The dissidents _hold_ a great problem in every political party.

(a) cause   (b) give   (c) pose   (d) No improvement

Q91. I would have waited for you at the station if I _knew_ that you would come.

(a) had known   (b) was knowing   (c) have known   (d) No improvement

Q92. They are social insects, _living in communities_, regulated by definite laws, each member of society bearing well-defined and separate part in the work of a colony.

(a) who are living in communities   (b) living among a community
(c) who lives with a community   (d) No improvement

Q93. Practically _every part_ of the banana tree is used by man.

(a) each part   (b) any part   (c) most part   (d) No improvement

Q94. My _opinion for_ the film is that it will bag the national ward.

(a) opinion to   (b) opinion about   (c) opinion on   (d) No improvement

In each or the following questions, a sentence has been given in Active (or Passive) voice. Out of the four alternatives suggested, select the one which best express the same sentence in Passive (or Active) voice.

Q95. You need to clean your shoes properly.

(a) Your shoes are needed to clean properly.   (b) You are needed to clean your shoes properly.
(c) Your shoes need to be cleaned properly.   (d) Your shoes are needed by you to clean properly.

Q96. The Principal has granted him a scholarship.

(a) A scholarship has granted to him by the Principal.   (b) He has been granted a scholarship by the Principal.
(c) He has granted a scholarship by the Principal.   (d) A scholarship was granted to him by the Principal.

Q97. Someone pulled the bull violently.

(a) The bull had been pulled violently by someone.   (b) The bull was to be pulled violently by someone.
(c) The bull had been pulled violently.   (d) The bull was pulled violently.

Rearrange the following part of the sentence in form of a meaningful sentence.

Q98. I bought from your shop (P) / a week ago (Q) / to send the books (R) / you have not cared (S)

(a) Q P S R   (b) Q P R S   (c) S R P Q   (d) P Q S R

Q99. they marched (P) / for a while under a tree(Q) / having rested (R) / on to their journey (S)

(a) S R Q P   (b) P S R Q   (c) Q R P S   (d) R Q P S

Q100. as the President entered the hall (P) / from his seat (Q) / to greet him (R) / everyone got up (S)

(a) R Q P S   (b) Q P R S   (c) P S Q R   (d) S Q R P

PART–I : GENERAL KNOWLEDGE
ANSWER PRACTICE TEST PAPER - 5

1. (b) electrical energy into light energy
2. (c) Diffusion
3. (b) high pressure
4. (a) current more than the input current
5. (c) organic bio fertilizer
6. (d) Calcium carbonate only
7. (a) decrease the rate of setting of cement
8. (c) lucite
9. (d) eat very little and fear gaining weight
10. (a) analysis of DNA to check the presence of a particular gene in a person
11. (c) Duodenum
12. (c) Stomata
13. (a) Keshab Chandra Sen and Debendranath Tagore
14. (c) visit the Buddhist institutions and to collect copies of Buddhist manuscripts
15. (b) Ruskin-Tolstoy-Thoreau
16. (b) Mahatma Gandhi
17. (b) Lord Dalhousie
18. (a) Dadabhai Naoroji
19. (b) Sarnath
20. (a) Mercury
21. (d) typical marine vegetation
22. (d) Poles
23. (a) carbon dioxide
24. (c) The length of a year is not an integer number of days
25. (a) all light is scattered by them
26. (a) low escape velocity of air molecule and low gravitational attraction
27. (a) either house of the Parliament
28. (d) Universal adult franchise
29. (c) 12:00 noon
30. (c) Chaudhary Charan Singh
31. (b) Right to Education
32. (c) swear members and hold charge till a regular Speaker is elected
33. (b) he/she shall be regulated by law
34. (d) inversely with the price level
35. (d) State as well as Central Government
36. (c) the Finance Ministry
37. (a) DRDO
38. (c) Surface-to-Air
39. (c) CATS
40. (d) Lord's Cricket Ground
41. (d) Karnam Malleswari
42. (b) Mithali Raj
43. (b) Sailing
44. (b) Mount Abu
45. (a) Amphibians
46. (b) India
47. (d) Maharashtra
48. (b) WTO
49. (b) IAF
50. (b) Karnataka

PART–II : ENGLISH
ANSWER PRACTICE TEST PAPER - 5

51. (a) though he admired them, he lacked a fine physique himself
52. (d) overcome the fear of act
53. (b) butterflies and fossils
54. (b) was scared of falling down
55. (c) he kept an doing what gave joy and recreation at home
56. (b) Eulogy
57. (a) Discuss
58. (c) Intimidate
59. (b) Relax
60. (c) Harmonious
61. (b) Beneficial
62. (c) Commitment
63. (b) Dependent
64. (b) Appreciate
65. (a) Serene
66. (b) Inconsequential
67. (d) Active
68. (c) Rapid
69. (b) preoccupations
70. (a) apprised
71. (a) rites
72. (b) contented with
73. (b) in the course of time
74. (a) If the police would have worked
    If the police had worked in time the riot would not have occurred.
75. (b) decide on your next
    It is time you decided on your next course of action.

76. (b) have a different version
    Each of them has a different version of the crime.
77. (a) What made him to do it
    What made him to it, or who provoked him is still not known.
78. (a) Despite of continuing pain
    Despite of continuing pain, she worked at her temporary job most of the week.
79. (b) was in panic
80. (c) to be kept waiting
81. (b) forget the past
82. (b) have a drink
83. (d) Epitaph
84. (a) Omnivorous
85. (b) Which is undertaken in a bad faith
86. (c) QSRP
87. (b) SRQP
88. (c) QRSP

89. (d) SQPR
90. (a) cause
91. (a) had known
92. (d) No improvement
93. (d) No improvement
94. (b) opinion about
95. (c) Your shoes need to be cleaned properly.
96. (b) He has been granted a scholarship by the Principal.
97. (d) The bull was pulled violently.
98. (c) S R P Q
99. (d) R Q P S
100. (c) P S Q R