PRELIMINARY INTERVIEW BOARD

TERRITORIAL ARMY COMMISSION : PRACTICE TEST PAPER - 2

PAPER–1: REASONING & ELEMENTARY MATHEMATICS

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. 1, 9, 25, 49, ?, 121
(a) 64 (b) 81 (c) 91 (d) 100

Q2. $\frac{2}{3}, \frac{4}{7}, ?, \frac{11}{21}, \frac{16}{31}$
(a) $\frac{5}{9}$ (b) $\frac{6}{11}$ (c) $\frac{7}{13}$ (d) $\frac{9}{17}$

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. T, R, P, N, L, ?, ?
(a) J, G (b) J, H (c) K, H (d) K, I

Q4. BMX, DNW, FOU ?
(a) GHO (b) GPS (c) HPS (d) HPT

Q5. ab _ _ baa _ _ ab _
(a) aaaaa (b) aabaa (c) aabab (d) baabb

Q6. N5V, K7T, ?, E14P, B19N
(a) H9R (b) H10Q (c) H10R (d) I10R

Direction Choose the correct alternative which shows the same relationship.

Q7. Walking: Running :: Smiling : ?
(a) Feeling (b) Laughing (c) Face (d) Weeping

Q8. Errata : Books : Flaws : ?
(a) Manuscripts (b) Metals (c) Speech (d) Charter

Q9. White : Peace :: Red : ?
(a) Violence (b) Roses (c) Hatred (d) Cleanliness

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

Q10. Marble: Slate: Gneiss : ?
(a) Quartzite (b) Limestone (c) Coal (d) Sandstone

Q11. Jam : Jelly : Pickles : ?
(a) Butter (b) Marmalade (c) Grapes (d) Preservative

Direction Choose the odd one out.

Q12. Find the odd one out.
(a) Goat (b) Puppy (c) Cow (d) Buffalo

Q13. Find the odd one out.
(a) Rectangle (b) Square (c) Cube (d) Triangle

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) Mercury : Sun (b) Moon : Earth (c) Star : Galaxy (d) Wheel : Axle

Q15. (a) Army General (b) Team Captain (c) Crache: Infant (d) Meeting Chairman

Q16. In a certain language, SIGHT is written as FVTUG How is REVEAL written in the same language?
(a) YNRIRE (b) DQHQMX (c) FSJSOZ (d) ERIRNY

Q17. In a certain code, SPRING is written as UNUFRC. How will the word MOBILE be written in that code language?
(a) KQEFPA (b) OMDGNC (c) OMDGPA (d) OMEFPA

Q18. If, in a language, 'finger' is called 'toe', 'toe' is called 'foot', 'foot' is called 'thumb', 'thumb' is called 'ankle', ankle' is called 'palm' and ' palm' is called 'knee', then in that language, what will an illiterate man put to mark his signatures?
(a) Toe (b) Knee (c) Thumb (d) Ankle

Q19. If the animals which can walk are called 'swimmers, animals who crawl are called 'flying, those living in water are called 'snakes' and those which fly in the sky are called hunters', then what will a lizard be called?
(a) Swimmers (b) Snakes (c) Flying (d) Hunters

Q20. A woman introduces a man as the son of the brother of her mother. How is the man related to the woman?
(a) Nephew (b) Son (c) Cousin (d) Uncle

Q21. Deepak said to Nitin, "That boy playing football is the younger of the two brothers of the daughter of my father's wife." How is the boy playing football related to Deepak?
(a) Son (b) Brother (c) Cousin (d) Nephew

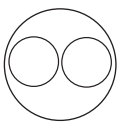
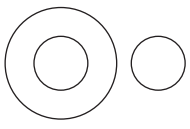
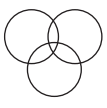
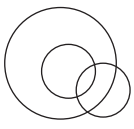
Q22. Five friends A, B, C, D and E are standing in a row facing South but not necessarily in the same order. Only B is between A and E, C is immediate right to E and D is immediate left to A. On the basis of above information, which of the following statements is definitely true?
(a) B is to the left of A.
(b) D is third to the left of E.
(c) B is to the right of E.
(d) A is second to the left of C.

Q23. In a shop, there were 4 dolls of different heights A, B, C and D. D is neither as tall as A nor as short as C. B is shorter than D but taller than C. If Mani wants to purchase the tallest doll, which one should she purchase?
(a) Only A (b) Only D (c) Either A or D (d) Either B or D

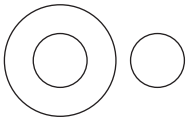
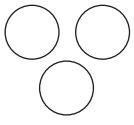
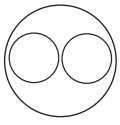
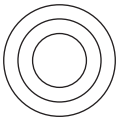
Q24. Amit walked 30 metres towards East, took a right turn and walked 40 metres. Then he took a left turn and walked 30 metres. In which direction is he now from the starting point?
(a) North–east (b) East (c) South–east (d) South

Q25. Sunita rode her scooty Northwards, then turned left and then again rode to her left 4 km. She found herself exactly 2 km West of her starting point. How far did she ride Northwards initially?
(a) 2 km (b) 4 km (c) 6 km (d) 5 km

Q26. Which of the following diagrams indicates the best relation between Children, Naughty and Studious?

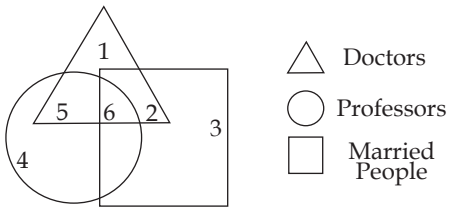
(a)  (b)  (c)  (d) 

Q27. Which of the following diagrams indicates the best relation between India, Haryana and World?

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

Q28. Which number indicates doctors who are not married?

(a) 6 (b) 1 (c) 4 (d) 2



Q29. Rajan is sixth from the left end and Vinay is tenth from the right end in a row of boys. If there are eight boys between Rajan and Vinay, how many boys are there in the row?

(a) 23 (b) 24 (c) 25 (d) 26

Q30. Richard is fifteenth from the front in a column of boys. There were thrice as many behind him as there were in front. How many boys are there between Richard and the seventh boy from the end of the column?

(a) 33 (b) 34 (c) 35 (d) Data inadequate

Q31. Sangeeta remembers that her father's birthday was certainly after eighth but before thirteenth of December. Her sister Natasha remembers that their father's birthday was definitely after ninth but before fourteenth of December. On which date of December was their father's birthday?

(a) 10th (b) 11th (c) 12th (d) Data inadequate

Q32. The priest told the devotee, "The temple bell is rung at regular intervals of 45 minutes. The last bell was rung five minutes ago. The next bell is due to be rung at 7.45 a.m." At what time did the priest give this information to the devotee?

(a) 7.40 a.m. (b) 7.05 a.m. (c) 7.00 a.m. (d) 6.55 a.m.

Q33. If $ means +, # means –, @ means × and * means ÷, then what is the value of 16 $ 4 @ 5 # 72 * 8?

(a) 25 (b) 27 (c)29 (d) 36

Q34. If × means +,+ means ÷, – means × and ÷ means–, then 8 × 7 – 8 + 40 + 2=?

(a) 1 (b)$7\frac{2}{5}$ (c) $8\frac{3}{5}$ (d) 44

Q35. If P denotes ÷, Q denotes ×, R denotes + and S denotes –, then what is the value of 18 Q 12 P 4 R 5 S 6 ?

(a) 53 (b) 59 (c) 63 (d) 65

Q36. Find the missing term.

6	9	15
8	12	20
4	6	?

(a) 5 (b) 10 (c) 15 (d) 21

Q37. Find the missing term.

3	2	2
6	20	4
12	25	64
6	10	?

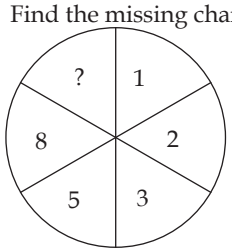
(a) 6 (b) 8 (c) 10 (d) 12

Q38. Find the missing term.

7B	5C	6B
3C	9B	19A
15A	17A	?

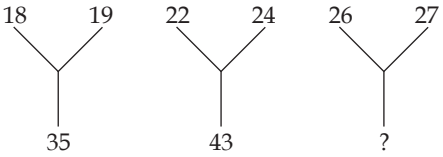
(a) 10C (b) 12C (c) 14B (d) 16C

Q39. Find the missing character in the following figure.



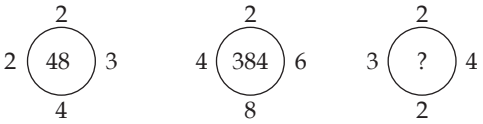
(a) 10 (b) 12 (c) 13 (d) 15

Q40. Find the missing character in the following figure.



(a) 49 (b) 76 (c) 89 (d) 94

Q41. Find the missing character in the following figure.



(a) 42 (b) 44 (c) 46 (d) 48

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

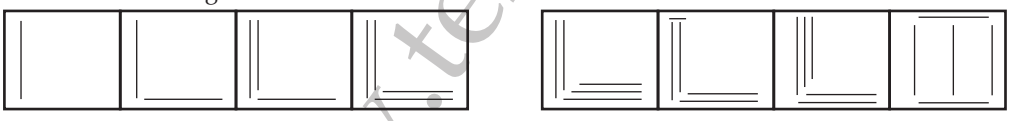
Q42. Statements: All film stars are playback singers. All film directors are film stars.
Conclusions: I. All film directors are playback singers.
II. Some film stars are film directors
(a) if only conclusion I follows; (b) if only conclusion II follows;
(c) if neither conclusion I nor II follows; (d) if both conclusions I and II follow.

Q43. Statements: All pens are chalks. All chairs are chalks.
Conclusions : I. Some pens are chairs.
II. Some chalks are pens.
(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: All jungles are tigers. Some tigers are horses.
Conclusions: I. Some horses are jungles.
II. No horse is jungle.
(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.

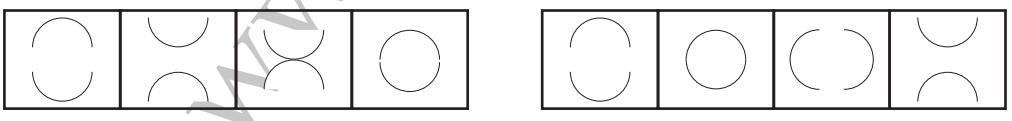
Direction Each of the problems, contains four figures marked as (A), (B), (C), (D) and answer figures marked as (a), (b), (c) and (d). Select a figure from amongst the answer figures which will continue in the same series as given in the problem figure.

Q45. Find out the next figure



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

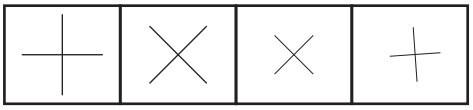
Q46. Find out the next figure



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

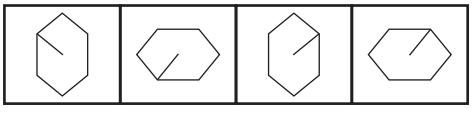
Direction Each of the following problems, contains 4 figures marked (a), (b), (c), (d). Find the odd figure.

Q47.



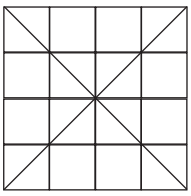
(a) (b) (c) (d)

Q48.



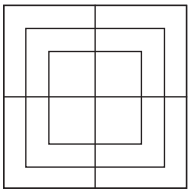
(a) (b) (c) (d)

Q49. How many triangles are there puzzles .



(a) 36 (b) 40 (c) 44 (d) 48

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



(a) 8 (b) 12 (c) 15 (d) 18

PART–II : ELEMENTARY MATHEMATICS

Q51. If a : b = b : c then $a^4 : b^4$ is equal to
(a) ac : b^2 (b) a^2 : c^2 (c) c^2 : a^2 (d) b^2 : ac

Q52. The perimeters of five squares are 24cm, 32, 40cm, 76cm and 80cm. respectively. Perimeter of another square, whose area is equal to sum of areas of all square is
(a) 31cm. (b) 62cm. (c) 124cm. (d) 961cm.

Q53. The radius of wheel that makes 113 revolutions to go 2km. 26 decameter is $\left(\text{Take } \pi = \frac{22}{7}\right)$
(a) $4\frac{4}{13}$ m. (b) $6\frac{4}{11}$ m. (c) $12\frac{4}{11}$ m. (d) $3\frac{2}{11}$ m.

Q54. 12 spheres of the same size are made by melting a solid cylinder of 16cm. diameter and 2cm. height. The diameter of each sphere is
(a) 2cm. (b) 7cm. (c) 3cm. (d) $\sqrt{3}$ cm.

Q55. After allowing a discount of 12% on the marked price of an article, it is sold for ₹ 880. Find its marked prize
(a) ₹ 1100 (b) ₹ 2000 (c) ₹ 1000 (d) ₹ 2100

Q56. If $\sin x + \sin y = a$ and $\cos x + \cos y = b$ then value of $\sin x \sin y + \cos x \cos y$ is
(a) a + b – ab (b) a + b + ab (c) $a^2 + b^2 - 2$ (d) $\frac{a^2 + b^2 - 2}{2}$

Q57. Find the unit place of the product of $(2467)^{153} \times (341)^{72} \times (225)^{721}$
(a) 1 (b) 3 (c) 5 (d) 7

Q58. Average of 5 consecutive even numbers is 70. Find the product of the smallest and the greatest number.
(a) 6674 (b) 4884 (c) 5525 (d) 4080

Q59. If $(x + 7954 \times 7956)$ be a square number, then the minimum positive value of x is
(a) 1 (b) 16 (c) 9 (d) 4

Q60. If $a = \sqrt{7 + 2\sqrt{12}}$ and $b = \sqrt{7 - 2\sqrt{12}}$ then $(a^3 + b^3)$ is equal to
(a) 40 (b) 44 (c) 48 (d) 52

Q61. If $a * b = a^b$ then the value of 5 * 3
(a) 125 (b) 243 (c) 53 (d) 15

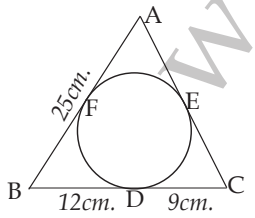
Q62. A car moves at a speed of 54km/h. what is the speed of the car in meters per second?
(a) 10m/s. (b) 12m/s. (c) 15m/s. (d) 20m/s.

Q63. If the diagonal of a rectangle is double of 8.5cm. and its perimeter is 6cm. more than 40cm. Find the area of the rectangle.
(a) $110cm^2$ (b) $116cm^2$ (c) $120cm^2$ (d) $128cm^2$

Q64. If $\sin 17° = \frac{x}{y}$ then the value of (sec 17° – sin 73°) is
(a) $\frac{y^2}{x\sqrt{y^2 - x^2}}$ (b) $\frac{x^2}{y\sqrt{y^2 - x^2}}$ (c) $\frac{x^2}{y\sqrt{x^2 - y^2}}$ (d) $\frac{y^2}{x\sqrt{x^2 - y^2}}$

Q65. The shadow of a tower is times its height. Then the angles of elevation of the top of the tower is
(a) 45° (b) 30° (c) 60° (d) 90°

Q66. In the given figure length of side AC is



(a) 20 (b) 22 (c) 21 (d) 18

Q67. If $a^2 + b^2 = x$ and $ab = y$ then find the value of $\frac{a^4 + b^4}{a^2 - ab\sqrt{2} + b^2}$
(a) $x + 2y$ (b) $x - \sqrt{2y}$ (c) $\sqrt{2x} + y$ (d) $2x + y$

Q68. If the interest on ₹ 8000 be more the an the interest on ₹ 4000 by ₹ 400 in 2 years they the rate of interest per annum is:
(a) 5% (b) $5\frac{1}{2}$% (c) 6% (d) None of there

Q69. The size of a rectangular piece of paper is 100 cm x 44cm. A paper along its breadth. The volume of the cylinder is (use $\pi = \frac{22}{7}$)

(a) 4400cm^3 (b) 15400cm^3 (c) 35000cm^3 (d) 144cm^3

Q70. The surface area of a sphere is 64 πcm^2. Its diameter is equal to

(a) 16cm. (b) 8cm. (c) 4cm. (d) 2cm.

Q71. A can cultivate $\frac{2}{5}$ th of a land in 6 days and B can cultivate $\frac{1}{3}$th of the same land in 10 days working together A and B can cultivate $\frac{4}{5}$th of the land is

(a) 4 days (b) 5 days (c) 8 days (d) 8 days

Q72. A, B and C can complete a piece of work in 24, 6 and 12 days respectively. Working together, they will complete the same work in

(a) $\frac{1}{4}$ days (b) $\frac{7}{24}$ days (c) $3\frac{3}{7}$ days (d) 4 days

Q73. The difference between two numbers is 3. If the sum of their squares is 369. Then the sum of the numbers.

(a) 81 (b) 33 (c) 27 (d) 25

Q74. ABCD is a rectangle where the ratio of the length of AB and BC is 3 : 2. If P is the mid point of AB then the value of sin $\angle$CPB is

(a) $\frac{3}{5}$ (b) $\frac{2}{5}$ (c) $\frac{3}{4}$ (d) $\frac{4}{5}$

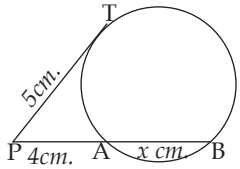
Q75. In ΔABC if $2\angle A = 3\angle B = 6\angle C$ value of $\angle$B is

(a) 60° (b) 30° (c) 45° (d) 90°

Q76. $\angle A + \frac{1}{2}\angle B + \angle C = 140°$ then $\angle$B is

(a) 50° (b) 80° (c) 40° (d) 60°

Q77. In the given figure P, AB is a secant and PT is tangent to the circle from P. If PI = 5cm., PA = 4cm. and AB = x cm then x is



(a) $\frac{4}{9}$cm. (b) $\frac{2}{3}$cm. (c) $\frac{9}{4}$cm. (d) 5 cm.

Q78. If the compliment of an angle is one fourth of its supplementary angle, then the angle is

(a) 120° (b) 60° (c) 30° (d) 90°

Q79. If the distance between two points (0, –5) and (x, 0) is 13 units, then the value of x is

(a) 10 unit (b) 12 unit (c) 9 unit (d) 6 unit

Q80. A man bought 13 articles at ₹ 70 each, 15 at ₹60 each and 12 at ₹ 65 each. The average price per article is

(a) ₹60–24 (b) ₹64–75 (c) ₹65–75 (d) ₹62–25

Q81. If the ratio of two numbers is 2 : 3 and their LCM is 54. then the sum of the two number is

(a) 5 (b) 15 (c) 45 (d) 270

Q82. The HCF of two number is 16 and their LCM is 160. If one of the number is 32, then the other number is

(a) 48 (b) 80 (c) 96 (d) 112

Q83. The smallest five digit number which is divisible by 12, 18 and 21 is

(a) 10080 (b) 30256 (c) 10224 (d) 50321

Q84. The value of (1 + cot A – cosec A) (1 + tan A + secA) is

(a) 0 (b) 1 (c) 2 (d) 3

Q85. The radius and height of cylindrical pot are 14cm. and 30 cm. respectively. Cylindrical pot is filled with sand. When pot filled with sand overturned on the ground, the sand formed the conical shape with height of 18cm. Then what would be radius of conical shape sand

(a) $15\sqrt{5}$ cm. (b) $16\sqrt{5}$ cm. (c) $14\sqrt{5}$ cm. (d) $10\sqrt{5}$ cm.

Q86. If $\tan\theta + \sec\theta = x$, the value of $\sec\theta$ is

(a) $\frac{2x}{x^2 - 1}$ (b) $\frac{2x}{x^2 + 1}$ (c) $\frac{x^2 + 1}{2x}$ (d) $\frac{x^2 - 1}{2x}$

Q87. The average age of m boys in a class is 'a' year. If the average of n of then is 'b' years, then the average age of the remaining boys are

(a) $\frac{ma - nb}{m - n}$ (b) $\frac{na - mb}{m - n}$ (c) $\frac{ma + nb}{m - n}$ (d) $\frac{ma - nb}{m + n}$

Q88. The value of $\frac{x^2-(y-z)^2}{(x+z)^2-y^2}+\frac{y^2-(x-z)^2}{(x+y)^2-z^2}+\frac{z^2-(x-y)^2}{(y+z)^2-x^2}$

(a) –1 (b) 0 (c) 1 (d) None of there

Q89. If $\frac{\cos x}{1+\operatorname{cosec} x}+\frac{\cos x}{\operatorname{cosec} x-1}=2$ then find the value of x

(a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$ (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

Q90. Three sets of English, Maths and Science books containing 336, 240 and 96 books respectively. All the books have to stored subjective and height of each stock is the same. total no. of stocks will be.

(a) 14 (b) 21 (c) 22 (d) 48

Q91. Find the value of $\sqrt{8}+3\sqrt{32}-3\sqrt{128}+4\sqrt{72}$ ($\sqrt{2}=1.414$)

(a) 19.796 (b) 19.896 (c) 20.796 (d) 18.796

Q92. Two poles of equal height are standing opposite to each other on either side of 80m wide road. From a point between on the road, the angles of elevation to the poles are 60° and 30° respectively. Find the height of the pole.

(a) 11.55m. (b) 34.64m. (c) 60m. (d) 20m.

Q93. Distance between two cities, A and B is 1100 km. A train starts from A to B at 8a.m. with the speed of 60km/h. Another train starts from B to A at B to A at 10 a.m. with the speed of 80km/h. At what time do both train meet?

(a) 4p.m. (b) 5p.m. (c) 6p.m. (d) 9p.m.

Q94. If sides of a triangle are in the ratio $3:1\frac{1}{4}=3\frac{1}{4}$ then the triangle is

(a) right triangle (b) isoseles Δ (c) obtuse triangle (d) acute Δ

Q95. The area of an equilateral triangle inscribed in a circle is $4\sqrt{3}$ cm² the area of circle is

(a) $\frac{16}{3}\pi$ (b) $\frac{22}{3}\pi$ (c) $\frac{28}{3}\pi$ (d) $\frac{32}{3}\pi$

Q96. The circumradius of an equilateral triangle is 8cm. Then inradius of triangle is

(a) 3.25cm. (b) 3.50cm. (c) 4cm. (d) 4.25cm.

Q97. The maximum length of a pencil that can be kept in a rectangular box of dimensions 8cm × 6cm × 2cm. is

(a) $2\sqrt{13}$ cm. (b) $2\sqrt{14}$ cm. (c) $2\sqrt{26}$ cm. (d) $10\sqrt{2}$ cm.

Q98. The value of log tan 1° + log tan2° + log tan89°

(a) 2 (b) 1 (c) 0 (d) –1

Q99. The numbers x, $x+1$, $x+3$ are all prime numbers where x is an even number. What is the value of x

(a) 0 (b) 2 (c) 3 (d) 4

Q100. In the given figure $\angle X = 62°$ and $\angle XYZ = 54°$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$, respectively of ΔXYZ. then value of $\angle OZY$.

(a) 40° (b) 50° (c) 60° (d) 32°

PART–I : REASONING

ANSWER PRACTICE TEST PAPER - 2

1. (b) 81

Explanation:
The given series consists of squares of 1 consecutive odd numbers i.e. 1^2, 3^2, 5^2, 7^2,... So, missing term = 9^2 = 81.

2. (c) $\frac{7}{13}$

Explanation:
The sequence in the numerators is + 2, + 3, + 4, + 5 and that in the denominators is + 4, + 6,+8, + 10. So, the numerator of the missing fraction should (4+3) i.e. 7 and the denominator should be (7+6) i.e. 13. Thus, the missing term is $\frac{7}{13}$

3. (b) J, H

Explanation:

$T \xrightarrow{-2} R \xrightarrow{-2} P \xrightarrow{-2} N \xrightarrow{-2} L \xrightarrow{-2} (J) \xrightarrow{-2} (H)$

4. (d) HPT

Explanation:

Ist Letter : $B \xrightarrow{+2} D \xrightarrow{+2} F \xrightarrow{+2} (H)$

IInd Letter : $M \xrightarrow{+1} N \xrightarrow{+1} O \xrightarrow{+1} (P)$

IIIrd Letter : $X \xrightarrow{-1} W \xrightarrow{-2} U \xrightarrow{-1} (T)$

5. (b) aabaa

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

6. (c) H10R

Explanation:

Ist Letter : $N \xrightarrow{-3} K \xrightarrow{-3} (H) \xrightarrow{-3} E \xrightarrow{-3} B$

IInd Letter : $5 \xrightarrow{+2} 7 \xrightarrow{+3} (10) \xrightarrow{+4} 14 \xrightarrow{+5} 19$

IIIrd Letter : $V \xrightarrow{-2} T \xrightarrow{-2} (R) \xrightarrow{-2} P \xrightarrow{-2} N$

7. (b) Laughing

Explanation: Second is a more intense form of the first.

8. (b) Metals

Explanation: Errata comprises of errors in books. Similarly, flaws are the defects in metals.

9. (a) Violence

Explanation: First is a symbol of the second.

10. (a) Quartzite

Explanation: All are metamorphic rocks.

11. (b) Marmalade

Explanation: All are different forms in which fruits/ vegetables are preserved.

12. (b) Puppy

Explanation: All except Puppy are names of animals, while puppy is a young one of dog.

13. (c) Cube

Explanation: All except Cube are two–dimensional plane figures.

14. (c) Star : Galaxy

Explanation: In all other pairs, first moves about the second.

15. (c) Crache: Infant

Explanation: In all other pairs, second is the head of the first.

16. (d) ERIRNY

Explanation: Each letter in the word is moved thirteen steps forward to obtain the corresponding letter of the code.

17. (d) OMEFPA

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

18. (d) Ankle

Explanation: Clearly, an illiterate man puts his 'thumb' to mark his signatures. But, as given, 'thumb' is called 'ankle. So, an illiterate man will put his ankle' to mark his signatures.

19. (c) Flying

Explanation: Clearly, a lizard crawls and the animals that crawl are called 'flying'. So, a lizard is called 'flying.

20. (c) Cousin

Explanation: Brother of mother– Uncle; Uncle's son Cousin.

21. (b) Brother

Explanation: Father's wife– Mother; Mother's daughter Sister; Deepak's sister's younger brother Deepak's younger brother. So, the boy is Deepak's brother.

22. (b) D is third to the left of E.

Explanation: Since the friends are standing facing South, so your left and right shall be taken as their right and left respectively.

C is immediate right to E. So, we have: C, E. D is immediate left to A. So, we have: A, D. Since B is between A and E, so the sequence becomes: C, E, B, A, D.

Thus, (i) B is to the right of A; (ii) D is third to the left of E; (iii) B is to the left of E; (iv) A is third to the left of C.

23. (a) Only A

Explanation: D is not as tall as A ⇒ D is shorter than A ⇒ D< A.

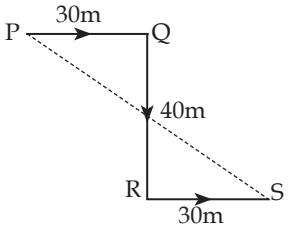
D is not as short as C ⇒ D is taller than C ⇒ D> C.

B is shorter than D but taller than C ⇒ C < B < D.

Thus, we have: C < B < D < A. So, A is the tallest.

24. (c) South–east

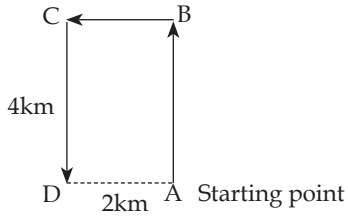
Explanation: The movements of Amit are as shown in Fig. (P to Q. Q to R and R to S). Clearly, his final position is S which is to the South–east of the starting point P.



25. (b) 4 km

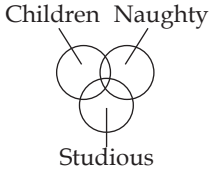
Explanation: Required distance = AB = CD = 4km

So, option (b) is correct answer.



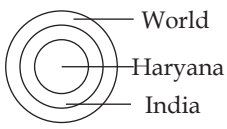
26. (c)

Explanation: Some children are naughty and studious. Some naughty are children and studious. Some studious are children and naughty.



27. (d)

Explanation: India is a part of the world and Haryans part of India.



28. (b) 1

Explanation:

29. (b) 24

Explanation: Clearly, number of boys in the row = (6+10+8) = 24.

30. (c) 35

Explanation: Number of boys in front of Richard = 14.

Number of boys behind Richard = (14 × 3) = 42.

∴ Total number of boys the column = (14 + 1 + 42) = 57.

In a column of 57 boys, the seventh boy from the end is clearly 51st from the start.

Thus, we have to find the number of boys between the 15th and the 51st boy, which is clearly 35.

31. (d) Data inadequate

Explanation: According to Sangeeta, the father's birthday falls on one of the days among 9th, 10th, 11th and 12th December. According to Natasha, the father's birthday falls on one of the days among 10th, 11th, 12th and 13th December.

The days common to both the groups are 10th, 11th and 12th December. So, the father's birth day falls on any one of these days.

32. (b) 7.05 a.m.

Explanation: Clearly, the last bell rang 45 minutes before 7.45 a.m. i.e., at 7.00 a.m. But it happened five minutes before the priest gave the information to the devotee. So, the information was given at 7.05 a.m.

33. (b) 27

Explanation: Using the correct symbols, we have: Given expression 16 + 4 × 5 – 72 ÷ 8 = 16 + 20 – 9 = 36 – 9 = 27.

34. (b) $7\frac{2}{5}$

Explanation: Using the correct symbols, we have:

Given expression = 8 + 7 × 8 ÷ 40 – 2

$= 8 + 7 \times \frac{1}{8} - 2$

$= 6 + = 6 + \frac{1}{5} = \frac{37}{5} = 7\frac{2}{5}$

35. (a) 53

Explanation: Using the correct symbols, we have:

Given expression = 18 × 12 ÷ 4 + 5 – 6

= 18 × 3 + 5 – 6

= 54 + 5 – 6 = 59 – 6 = 53.

36. (b) 10

Explanation: In the first row, $6 \times \frac{3}{2} = 9, 6 \times \frac{5}{2} = 15$

In the second row, $8 \times \frac{3}{2} = 12, 8 \times \frac{5}{2} = 20.$

∴ In the third row, missing number $= 4 \times \frac{5}{2} = 10.$

37. (b) 8

Explanation: In the first column, $\sqrt[3]{3 \times 6 \times 12}$

$= \sqrt[3]{216} = 6.$

In the second column, $\sqrt[3]{2 \times 20 \times 25}$ $\sqrt[3]{1000} = 10$

∴ In the third column, missing number , $\sqrt[3]{2 \times 20 \times 25}$

$= \sqrt[3]{512} = 8$

38. (d) 16C

Explanation: In each column, out of the letters A, B and C, each of these must appear once. Along the diagonals, the sum of two numbers is equal to the third number.

∴ The missing number will be (7 + 9) i.e., 16 and the letter will be C. So, the answer is 16C.

39. (c) 13

Explanation: We have : 1 + 2 = 3, 2 + 3 = 5, 3 + 5 = 8. So, missing number = 5+ 8 = 13.

40. (a) 49

Explanation: We have: (18 + 19) – 2 = 35; (22 + 24) – 3 = 43.

So, missing number (26 + 27) – 4 = 49.

41. (d) 48

Explanation: The number inside the circle is the product of the numbers outside it.
So, missing number = 2 × 4 × 2 × 3 = 48.

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

Explanation: Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, I follows. II is the converse of the second premise and so it also holds.

43. (b) if only conclusion II follows.

Explanation: Since the middle term 'chalks' is not distributed even once in the premises, no definite conclusion follows. However, II is the converse of the first premise and so it holds.

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

Explanation: Since the middle term 'tigers' is not distributed even once in the premises, no definite conclusion follows. However, I and II involve only the extreme terms and form a complementary pair. So, either I or II follows.

45. (c)

Explanation: Vertical and horizontal line segments are added to the figure alternately.

46. (a)

Explanation: The two arcs get vertically inverted in the first step; both the arcs approach each other near the centre in the second step; they again get vertically inverted in the third step and move to the opposite sides in the fourth step. These four steps are repeated to continue the series.

47. (d)

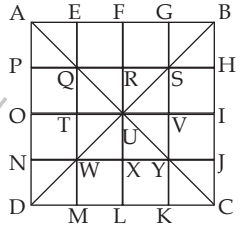
Explanation: In each one of the other figures, the two line segments cut each other at right angles

48. (c)

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

49. (d) 48

Explanation: The figure may be labelled as shown.



The simplest triangles are APQ, AEQ. QTU, QRU, BGS, BHS, RSU, SUV, TUW, UWX, NWD, WDM, UVY, UXY, JCY and YKC i.e., 16 in number. The triangles composed of two components each are QUW, QSU, SYU and UWY i.e., 4 in number. The triangles composed of three components each are AQU, AFU, FBU, BIU, UIC, ULC, ULD and OUD i.e., 8 in number.

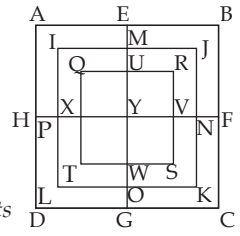
The triangles composed of four components each are QYW, QSW, QSY and SYW i.e., 4 in number. The triangles composed of six components each are AUD, ABU, BUC and DUC i.e., 4 in number. The triangles composed of seven components each are QMC, ANY, EBW, PSD, CQH, AGY, DSK and BJW i.e., 8 in number.

The triangles composed of twelve components each are ABD, ABC, BCD and ACD i.e. 4 in number

Thus, there are 16 + 4 + 8 + 4 + 4 + 8 + 4 = 48 triangles in the figure.

50. (c) 15

Explanation: We may label the figure as shown.



The simplest squares are A QUYX, URVY, YVSW and XYWT i.e., 4 in number.
The squares composed of two components each are IMYP, MJNY, YNKO and PYOL i.e., 4 in number. The squares composed of D three components each are AEYH, EBFY, YFCG and HYGD i.e., 4 in number.
There is only one square i.e., QRST composed of four components. There is only one square i.e., IJKL composed of eight components.
There is only one square i.e., ABCD composed of twelve components.
Total number of squares in the given figure 4+4+4+1+1+1= 15.

PART–II : ELEMENTARY MATHEMATICS
ANSWER PRACTICE TEST PAPER - 2

51. (b) $a^2 : c^2$

Explanation:

$a : b = b : c$

$\frac{a}{b} = \frac{b}{c}$

$b^2 = ac$

$a^4 : b^4 = a^4 : (ac)^2$

$= a^4 : a^2c^2$

$= a^2 : c^2$

52. (c) 124cm.

Explanation:

Side of sq. I $= \frac{24^{6}}{4_{1}} = 6cm.$

Side of sq. II $= \frac{32}{4_{1}} = 8cm.$

Side of sq. III $= \frac{40^{10}}{4_{1}} = 10cm.$

Side of sq. IV $= \frac{76^{19}}{4_{1}} = 19cm.$

Side of sq. V $= \frac{80^{20}}{4_{1}} = 20cm.$

Area of sq. I = side × side

$= 6 \times 6 = 36cm.^2$

Area of sq. II $= 8 \times 8 = 64cm.^2$

Area of sq. III $= 10 \times 10 = 100cm.^2$

Area of sq. IV $= 19 \times 19 = 361cm.^2$

Area of sq. V $= 20 \times 20 = 400cm.^2$

Area of new sq. = sum of areas of 5 squares

$side^2 = 36cm.^2 + 64cm.^2 + 100cm.^2 + 361cm.^2 + 400cm.^2$

$side^2 = 961cm.^2$

$side^2 = (31cm.)^2$

side = 31cm.

Perimeter of sq.= 4 × side

$= 4 \times 31 = 124cm.$

53. (d) $3\frac{2}{11}$ m.

Explanation:

Dis = 2km 26 decameter

= 200 decameter + 26 decameter

= 226 decameter

Dis covered in 113 revolution = 226 decameter

Dis covered in 1 revolution $= \frac{226^{2}}{113_{1}} = 2\ dm = 20m.$

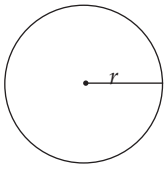
Let r be the radius of wheel

$2\pi r = 20$

$2 \times \frac{22}{7} \times r = 20$

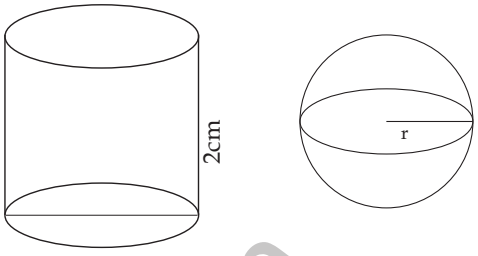
$r = \frac{20^{10}}{2_{1}} \times \frac{1}{1} \times \frac{7}{22_{11}}$

$r = \frac{35}{11} = 3\frac{2}{11}\ m.$



54. (b) 4cm.

Explanation:



Diameter of cylinder = 16cm.

Radius of cylinder $= \frac{16}{2} = 8cm.$

Height of cylinder = 2cm.

Volume of cylinder $= \pi \times 8 \times 8 \times 2 = 128\pi\ cm^3$

Volume of 1 sphere $= \frac{volume\ of\ cylinder}{12}$

$= \frac{128\pi}{12} cm^3$

$\frac{4}{3}\pi r^3 = \frac{128}{12}\pi$

$r^3 = \frac{128^{8\ 32}}{12}\pi \times \frac{3}{4\pi}$

$r^3 = 2^3$

$r = 2$

Diameter = 2 × radius

= 2 × 2cm. = 4cm.

55. (c) 1000

Explanation:

Let MP = x

Dis % = 12%

Discount = 12% of x

$= \frac{12}{100} \times x = \frac{3}{25}x$

MP – SP = Discount

$x - 880 = \frac{3}{25}x$

$x - \frac{3}{25}x = 880$

$\frac{22}{25}x = 880$

$x = \frac{880^{40}}{22_{1}} \times \frac{25}{1}$

$x = 1000$

56. (d) $\frac{a^2 + b^2 - 2}{2}$

Explanation:

$\sin x + \sin y = a$ .....(1)

$\cos x + \cos y = b$ .....(2)

squaring and adding (1) & (2)

$(\sin x + \sin y)^2 + (\cos x + \cos y)^2 = a^2 + b^2$

$= \sin^2 x + \sin^2 y + 2 \sin x \sin y + \cos^2 x + \cos^2 y + 2 \cos x \cos y = a^2 + b^2$

$= (\sin^2 x + \cos^2 x) + (\cos^2 y + \sin^2 y) + 2(\sin x \sin y + \cos x \cos y) = a^2 + b^2$

$= 2 + 2 (\sin x \sin y + \cos x \cos y) = a^2 + b^2$

$= 2(\sin x \sin y + \cos x \cos y) = a^2 + b^2 - 2$

$= \sin x \sin y + \cos x \cos y = \frac{a^2 + b^2 - 2}{2}$

57. (c) 5

Explanation:

$(2467)^{153} \times (341)^{72} \times (225)^{721}$

[we can take unit digit and divide the power by 4]

$= 7^1 \times 1 \times 5$

$= 7 \times 1 \times 5$

$= 5$

58. (b) 4884

Explanation:

Let five consecutive number are x, x+2, x+4, x+6, x+8

ATQ

$\frac{x + (x+2) + (x+4) + (x+6) + (x+8)}{5} = 70$

$5x + 20 = 350$

$5x = 330$

$x = \frac{\cancel{330}^{66}}{\cancel{5}_{1}}$

Smallest no. = x = 66

Greatest no. = x+8 = 66 + 8 = 74

Product of smallest and greatest number = 66 × 74 = 4884

59. (a) 1

Explanation:

$x + 7954 \times 7956$

$x + (7956-2) \times 7956$

$x + 7956^2 - 2 \times 7956$

If we put x = 1 it becomes complete square

$1 + 7956^2 - 2 \times 1 \times 7956$

$1^2 + 7956^2 - 2 \times 1 \times 7956$

$(7956 - 1)^2$

So x = 1

60. (a) 52

Explanation:

If $a = \sqrt{7 + 2\sqrt{12}}$

$a = \sqrt{7 + 2 \times \sqrt{3} \times \sqrt{4}}$

$\sqrt{4 + 3 + 2 \times \sqrt{3} \times 2}$

$\sqrt{2^2 + \sqrt{3}^3 + 2 \times \sqrt{3} \times 2}$

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

similarly $b = \sqrt{7 - 2\sqrt{12}}$

$b = 2 - \sqrt{3}$

$a^3 + b^3 = (a+b)^3 - 3ab(a+b)$

$(2 + \cancel{\sqrt{3}} + 2 - \cancel{\sqrt{3}})^3 - 3(2 + \sqrt{3})(2 - \sqrt{3})(2 + \cancel{\sqrt{3}} + 2 - \cancel{\sqrt{3}})$

$= 4^3 - 3(2^2 - \sqrt{3}^2) \times 4$

$64 - 3(4-3) \times 4$

$64 - 12 = 52$

61. (a) 125

Explanation:

$a * b = a^b$

$5 * 3 = 5^3 = 125$

62. (c) 15m/s.

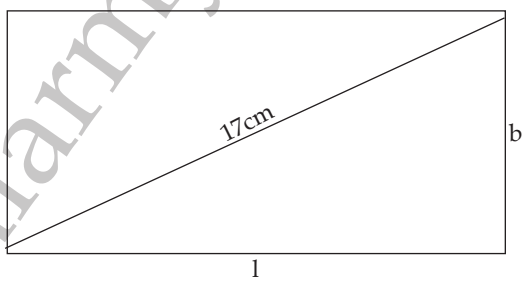
Explanation:

speed of car = 54km/h.

$= \cancel{54}^{3} \times \frac{5}{\cancel{18}_{1}}$

$= 15 m/s.$

63. (c) $120 cm^2$



Explanation:

$l^2 + b^2 = 17^2$

$l^2 + b^2 = 289$

diagonal $= 8.5 \times 2 = 17cm$

Perimeter $= 40 + 6$

$2(l + b) = 46$

$l + b = 23 \quad ....(1)$

squaring (1)

$(l + b)^2 = 23^2$

$l^2 + b^2 + 2lb = 529$

$289 + 2lb = 529$

$2lb = 529 - 289$

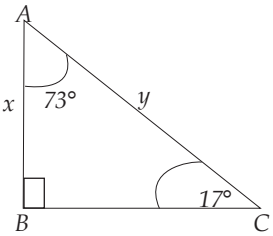
$2lb = 240$

$lb = 120$

Area of rectangle $= 120 cm^2$

64. (b)

Explanation:



$\sin 17° = \frac{x}{y}$

$BC = \sqrt{y^2 - x^2}$

$\sec 17° = \frac{y}{\sqrt{y^2 - x^2}}$

$\sin 73° = \frac{\sqrt{y^2 - x^2}}{y}$

$\frac{\sec 17° - \sin 73°}{}$

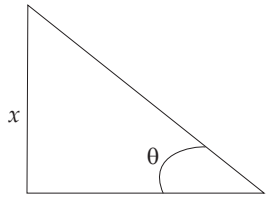
$\frac{y}{\sqrt{y^2 - x^2}} - \frac{\sqrt{y^2 - x^2}}{y}$

$\frac{y^2 - (y^2 - x^2)}{y\sqrt{y^2 - x^2}}$

$\frac{x^2}{y\sqrt{y^2 - x^2}}$

65. (b) 35

Explanation:



Let height of tower be x and shadow be $\sqrt{3}x$

Let angle of elevation be θ

$\tan\theta = \frac{x}{x\sqrt{3}}$

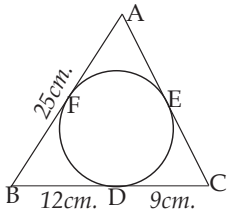
$\tan\theta = \frac{1}{\sqrt{3}}$

$\tan\theta = \tan 30°$

$\theta = 30°$

66. (b)

Explanation:



BD = BF

BF = 12

DC = CE

CE = 9cm.

AF = AB – BF

= 25 – 12 = 13 cm.

AF = AE = 13cm.

AC = AE + EC

= 13cm. + 9cm. = 22 cm.

Two tangents from a point are equal in length

67. (b) $x - \sqrt{2y}$

Explanation:

$a^2 + b^2 = x$

$ab = y$

$\frac{a^4 + b^4}{a^2 + ab\sqrt{2} + b^2} = \frac{(a^2 + b^2)^2 - 2a^2b^2}{a^2 + b^2 + \sqrt{2}ab}$

$= \frac{x^2 - 2y^2}{x + \sqrt{2}y}$

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

68. (a) 5%

Explanation:

Let rate of interest by R

$\frac{8000 \times R \times 2}{100} - \frac{4000 \times R \times 2}{100} = 400$

$= 160R - 80R = 400$

$= 80R = 400$

$= R = \frac{5\cancel{400}}{\cancel{80}_1}$

$= R = 5\%$

69. (a) 35000 cm^3

Explanation:

When a rectangular piece of paper is folded it becomes cylinder

breadth becomes height and length become circumference of base of cylinder

$2\pi r = 100$ $b = h$

$r = \frac{\overset{50}{\cancel{100}}}{\cancel{2\pi}}$ $h = 44$

Volume of cylinder $= \pi r^2 h$

$= \cancel{\pi} \times \frac{50}{\cancel{\pi}} \times \frac{50}{\pi} \times 44$

$= 50 \times 50 \times \frac{7}{\cancel{22}_1} \times \overset{2}{\cancel{44}}$

$35000 cm^3$

70. (b) 4 cm.

Explanation:

S.A of sphere $= 64\pi cm^2$

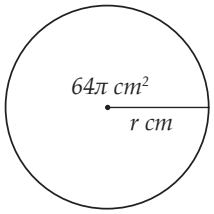
$4\pi r^2 = 64\pi$

$r^2 = \frac{\overset{16}{\cancel{64\pi}}}{\cancel{4\pi}_1} = 16$

$r^2 = 4^2$

diameter = 2r

= 2 × 4 cm. = 8cm.



71. (c) 24 units

Explanation:

A can do whole work $= \frac{5}{\cancel{2}} \times \overset{3}{\cancel{6}} = 15$ *days*

B can do whole work $= \frac{3}{1} \times 10 = 30$ *days*

Let total units of work = 30 units

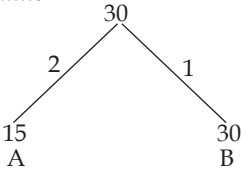
(L.C.M. of 15 and 30)

$\frac{4}{5}$*th of work* $= \frac{4}{\cancel{5}_1} \times \overset{6}{\cancel{30}} = 24$ *units*

$\frac{4}{5}$*th land cultivated*

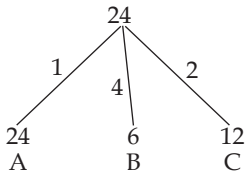
by A and B in $= \frac{24}{1 + 2}$

$= \frac{24}{3} = 8$ *days*



72. (a) $3\frac{3}{7}$ days

Explanation:



Let total units of work = 24 units

(L.C.M. of 24, 6 and 12)

No. of days taken by

A, B & C $= \frac{24}{1+4+2}$

$= \frac{24}{7} = 3\frac{3}{7}$ *days*

73. (c) *27*

Explanation:

Let two numbers are a and b

$a - b = 3$

$a^2 + b^2 = 369$ .... (1)

squaring both sides of (1)

$(a-b)^2 = 3^2$

$a^2 + b^2 - 2ab = 9$

$369 - 2ab = 9$

$-2ab = 9 - 369$

$-2ab = -360$

$2ab = 360$

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

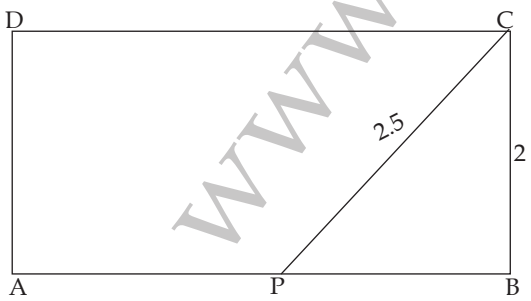
$= 369 + 360$

$(a+b)^2 = 729$

$(a+b)^{\cancel{2}} = 27^{\cancel{2}}$

74. (d) $\frac{4}{5}$

Explanation:



Let AB = 3 and CB = 2

$AP = PB = \frac{3}{2} = 1.5$

In ΔCPB

$CP^2 = CB^2 + PB^2$ *(Pythagorean Theorem)*

$CP^2 = \left(\frac{3}{2}\right)^2 + 2^2$

$CP^2 = \frac{9}{4} + 4$

$CP^2 = \frac{25}{4}$

$CP^2 = \left(\frac{5}{2}\right)^2 \Rightarrow CP = 2.5cm.$

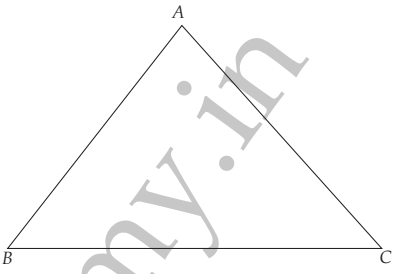
$\sin(\angle CPB) = \frac{CB}{PC}$

$\sin(\angle CPB) = \frac{2}{2.5}$

$\sin(\angle CPB) = 2 \times \frac{\cancel{10}^{2}}{\cancel{25}_{5}} = \frac{4}{5}$

75. (a) *60°*

Explanation:



Let $2\angle A = 3\angle B = 6\angle C = k$

$\angle A = \frac{k}{2}\ \angle B = \frac{k}{3}\ \angle C = \frac{k}{6}$

In ΔABC

$\angle A + \angle B + \angle C = 180°$

$\frac{k}{2} + \frac{k}{3} + \frac{k}{6} = 180°$

$\frac{3k + 2k + k}{6} = 180°$

$\frac{\cancel{6k}}{\cancel{6}} = 180°$

$k = 180°$

$\angle B = \frac{k}{3} = \frac{\cancel{180°}^{60°}}{\cancel{3}_{1}} = 60°$

76. (b) 80

Explanation:

$\angle A + \frac{1}{2}\ \angle B + \angle C = 140°$

$\frac{1}{2}\angle B + \angle A + \angle C = 140°$

$\frac{1}{2}\angle B + (180° - \angle B) = 140°$ $\left[\angle A + \angle B + \angle C = 180°\right.$

$-\frac{1}{2}\angle B + 180° = 140°$ $\left.\angle A + \angle C = 180° - \angle B\right]$

$-\frac{1}{2}\angle B = -40°$

$B = 80$

77. (c) $\frac{9}{4}$

Explanation:

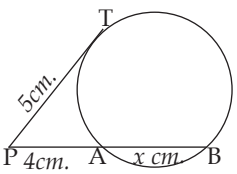
$PA \times PB = PT^2$

$4(4 + x) = 5^2$

$16 + 4x = 25$

$4x = 9$

$x = \frac{9}{4}$



78. (b) *60°*

Explanation

Let the angle be = x

compliment of x = 90° – x

supplement of x = 180° – x

$90° - x = \frac{1}{4}(180° - x)$

$4(90° - x) = 180° - x$

$360° - 4x = 180° - x$

$360° - 180° = 4x - x$

$3x = 180°$

$x = \frac{\cancel{180°}^{60°}}{\cancel{3}_{1}} = 60°$

79. (b) *12*

Explanation

A (0,–5) *B(x,0)*

AB = 13

$\sqrt{(x-0)^2 + (0-(-5)^2} = 13$

$x^2 + 25 = 169$

$x^2 = 144$

$x^2 = 12^2$

$x = 12$

80. (b) ₹ *64.75*

Explanation

Cost of 13 articles = 70 × 13

= ₹910

Cost of 15 articles = 15 × 60

= ₹900

Cost of 12 articles = 12 × 65

= ₹780

$\text{Average price} = \frac{910 + 900 + 780}{40}$

$\frac{\cancel{2590}}{\cancel{40}} = ₹\ 64.75$

81. (c) *45*

Explanation:

Let the numbers are 2x and 3x

Then LCM will be 6x

$6x = 54$

$x = \frac{\cancel{54}^{9}}{\cancel{6}_{1}}$

Numbers are 2x, 3x

= 2 × 9, 3 × 9

= 18, 27

Sum of the numbers = 27 + 18 = 45

82. (b)

Explanation:

Let the other number be x

Product of two number = HCF × LCM

$32x = 16 \times 160$

$x = \frac{\overset{1}{\cancel{16}} \times 160^{80}}{\cancel{32}_{2_1}}$

$x = 80$

83. (b) *1080*

Explanation:

2	12 – 18 – 21
2	6 – 9 – 21
3	3 – 9 – 21
3	1 – 3 – 7
7	1 – 1 – 7
	1 – 1 – 1

LCM of 12, 18 and 21 = 2×2×3×3×7×1×1×1 = 252

Smallest 5 digit number 10000

$$\begin{array}{r} 252\overline{)10000}(39 \\ 756 \\ \hline 2440 \\ 2268 \\ \hline 172 \end{array}$$

252 – 172 = 80

Required number 10000 + 80 = 1080

84. (c) *2*

Explanation:

(1 + cotA – cosecA) (1 + tanA + secA)

$\left(1 + \frac{cosA}{sinA} - \frac{1}{sinA}\right)\left(1 + \frac{sinA}{cosA} - \frac{1}{cosA}\right)$

$\left(\frac{sinA + cosA - 1}{sinA}\right)\left(\frac{cosA + sinA + 1}{cosA}\right)$

$\frac{(sinA + cosA)^2 - 1^2}{sinAcosA}$

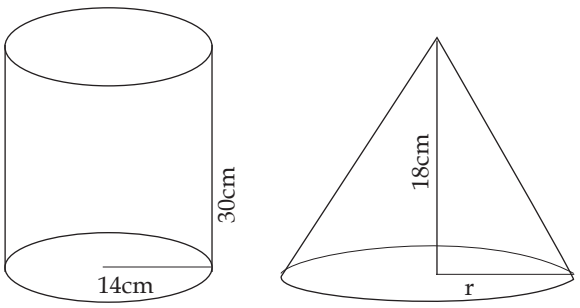
$\frac{sin^2A + cos^2A + 2sinAcosA - 1}{sinAcosA}$

$\frac{\cancel{1} + 2sinAcosA \cancel{- 1}}{sinAcosA}$

$\frac{\cancel{2sinAcosA}}{\cancel{sinAcosA}} = 2$

85. (c) $14\sqrt{5}$ *cm.*

Explanation:



Let radius of conical shape = r

volume of conical shape = volume of cylindrical pot

$\frac{1}{3}\pi \times r^2 \times 18 = \pi \times 14 \times 14 \times 30$

$r^2 = \frac{14 \times 14 \times \cancel{30}^{5} \times \cancel{3}^{1}}{\cancel{18}_{\cancel{3}_{1}}}$ $r^2 = (14\sqrt{5})^2$

86. (c) $\frac{x^2+1}{2x}$

Explanation:

$sec^2\theta - tan^2\theta = 1$

$(sec\theta + tan\theta)(sec\theta - tan\theta) = 1$

$x(sec\theta - tan\theta) = 1$

$sec\theta - tan\theta = \frac{1}{x}$ ..... (1)

$sec\theta + tan\theta = x$ ..... (2)

adding (1) & (2)

$sec\theta + tan\theta = x$

$sec\theta - tan\theta = \frac{1}{x}$

$2sec\theta = x + \frac{1}{x}$

$2\,sec\theta = \frac{x^2+1}{x}$

$sec = \frac{x^2+1}{2x}$

87. (A)

Explanation:

sum of ages of m boys $= m \times a = ma$

sum of ages of n boys $= n \times b = nb$

sum of ages of remaining boys $= ma - nb$

average age of remaining boys $= \frac{ma-nb}{m-n}$

88. (c) 1

Explanation:

$$\frac{x^2-(y-z)^2}{(x+z)^2-y^2} + \frac{y^2-(x-z)^2}{(x+y)^2-z^2} + \frac{z^2-(x-y)^2}{(y+z)^2-x^2}$$

$$\frac{(x-y+z)(x+y-z)}{(x+y+z)(x+z-y)} + \frac{(y+x-z)(y-x+z)}{(x+y+z)(x+y-z)} + \frac{(z-x+y)(z+x-y)}{(y+z-x)(y+z+x)}$$

$$= \frac{x+y-z+y-x+z+z+x-y}{x+y+z}$$

$$= \frac{x+y+z}{x+y+z} = 1$$

89. (c) $tan\ \frac{\pi}{4}$

Explanation:

$$\frac{cos\,x}{1+cosec\,x} + \frac{cos\,x}{cosec\,x-1} = 2$$

$$cosx\left(\frac{1}{cosec\,x+1} + \frac{1}{cosec\,x-1}\right) = 2$$

$$cosx\left(\frac{cosec\,x-1+cosec\,x+1}{(cosec\,x+1)(cosec\,x-1)}\right) = 2$$

$$\frac{cos\,x \times 2cosec\,x}{cosec^2x-1} = 2$$

$$\frac{cos\,x \times 2cosec\,x}{cot^2x} = 2$$

$$\frac{cos\,x \times 2}{sin\,x} \times \frac{sin^2x}{cos^2x} = 2$$

$$tan\,x = 1$$

$$tan\,x = tan\ \frac{\pi}{4}$$

90. (a) 14

Explanation:

2	336
2	168
2	84
2	42
3	21
	7

2	240
2	120
2	60
2	30
3	15
	5

2	96
2	48
2	24
2	12
2	6
	3

$336 = \underline{2 \times 2 \times 2 \times 2} \times \underline{3} \times 7$

$240 = \underline{2 \times 2 \times 2 \times 2} \times \underline{3} \times 5$

$96 = \underline{2 \times 2 \times 2 \times 2} \times 2 \times \underline{3}$

$HCF = 2 \times 2 \times 2 \times 2 \times 3 = 48$

No. of stocks $= \frac{336}{48} + \frac{240}{48} + \frac{96}{48}$

$= 7 + 5 + 2 = 14$

91. (a) 19.796

Explanation:

$\sqrt{8} + 3\sqrt{32} - 3\sqrt{128} + 4\sqrt{72}$

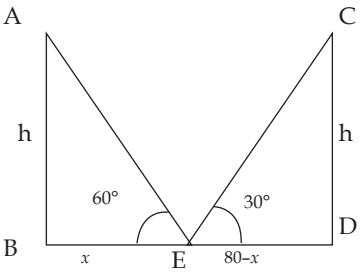
$= 2\sqrt{2} + 12\sqrt{2} - 24\sqrt{2} + 24\sqrt{2}$

$= 14\sqrt{2} = 14 \times 1.414$

$= 19.796$

92. (b) 34.64m.

Explanation:



Let AB = CD = h

BE = x and DE = 80–x

In ΔABE

$\frac{h}{x} = tan\,60^o$

$\frac{h}{x} = \sqrt{3}$

$h = x\sqrt{3}$ .....(1)

In ΔCED

$\frac{h}{80-x} = tan\,30^o$

$\frac{h}{80-x} = \frac{1}{\sqrt{3}}$

$h = \frac{80-x}{\sqrt{3}}$ .....(2)

from (1) & (2)

$x\sqrt{3} = \frac{80-x}{\sqrt{3}}$

$= 3x = 80-x$

$= 3x + x = 80$

$= 4x = 80$

$= x = 20$

$h = x\sqrt{3} = 20 \times \sqrt{3}$

$= 20 \times 1.73 = 34.64m.$

93. (b) 5p.m.

Explanation:

Let both trains meet after x after 10 a.m.

First train starts at 8 a.m.

A.T.Q

$60(x+2) + 80x = 1100$

$60x+120+80x = 1100$

$140x = 1100–120$

$140x = 980$

$x = \frac{\cancel{980}^{7}}{\cancel{140}_{1}}$

7 hours after 10 a.m. = 5 p.m.

94. (a) right triangle

Explanation:

$3 : \frac{5}{4} : \frac{13}{4}$

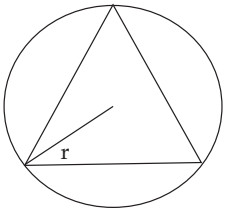
$12 : 5 : 13$

It is a Pythagorean triplet.

So it will be a right triangle.

95. (a) $\frac{16}{3}\pi$ cm²

Explanation:



Area of equilateral $\Delta = 4\sqrt{3}\ cm^2$

$\frac{\sqrt{3}}{4}s^2 = 4\sqrt{3}$

$s^2 = \cancel{4\sqrt{3}} \times \frac{4}{\cancel{\sqrt{3}}}$

$s = 4$

$r = \frac{s}{\sqrt{3}} = \frac{4}{\sqrt{3}}$

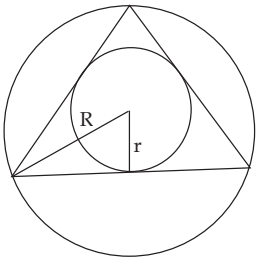
Area of circle $= \pi r^2$

$= \pi \times \left(\frac{4}{\sqrt{3}}\right)^2$

$= \frac{16}{3}\pi\ cm^2$

96. (a) 4

Explanation:



$R = \frac{s}{\sqrt{3}}$

$8\sqrt{3} = s$

$r = \frac{s}{2\sqrt{3}} = \frac{\cancel{8\sqrt{3}}}{\cancel{2\sqrt{3}}} = 4$

97. (c) $2\sqrt{26}$cm.

Explanation

maximum length of pencil $= l^2 + b^2 + h^2$

$= \sqrt{8^2 + 6^2 + 2^2}$

$= \sqrt{64 + 36 + 4} = \sqrt{104}$

$= 2\sqrt{26}cm.$

98. (c) 0

Explanation

$\log \tan 1° + \log \tan 2° + \text{---} \log \tan 89°$

$\log(\tan 1°\ \log \tan 2°\ \text{---}\ \tan 89°)$

$\log(\tan 1°\ \log \tan 2°\ \text{---}\ \tan 88°\ \tan 89°)$

$\log (\tan 1°\ \tan 2°\ \text{---} \frac{1}{\cot 88°} \times \frac{1}{\cot 89°})$

$\log (\tan 1°\ \tan 2°\ \text{---} \frac{1}{\cot(90°–2)} \times \frac{1}{\cot(90°–1)})$

$\log (\tan 1°\ \tan 2°\ \text{---} \frac{1}{\tan 2°} \times \frac{1}{\tan 1°})$

$\log 1 = 0$

99. (b) 2

Explanation

x, x+1, x+3 are prime number.

x is even and prime so x =2

100. (d)

Explanation

In ΔXYZ

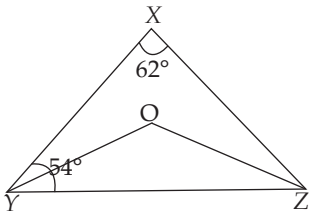
$62° + 54° + \angle XZY = 180°$

$\angle XZY = 180° – 116°$

$\angle XZY = 64°$

$\angle OZY = \frac{1}{2} \times \angle XZY$

$\frac{1}{\cancel{2}_{1}} \times \cancel{64}^{32}° = 32°$



PRELIMINARY INTERVIEW BOARD

TERRITORIAL ARMY COMMISSION : PRACTICE TEST PAPER - 2

PAPER–1: GENERAL KNOWLEDGE & ENGLISH

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. A brick is thrown vertically from an aircraft flying two kilometres above the earth. The brick will fall with a
(a) constant speed (b) constant velocity
(c) constant acceleration
(d) constant speed for some time then with constant acceleration as it nears the earth

Q2. The outside rear-view mirror of modern automobiles is marked with warning "objects in mirror are closer than they appear". Such mirrors are
(a) plane mirrors (b) concave mirrors with very large focal lengths
(c) concave mirrors with very small focal lengths (d) convex mirrors

Q3. X-rays are
(a) deflected by an electric field but not by a magnetic field(b) deflected by a magnetic field but not by an electric field
(c) deflected by both a magnetic field and an electric field (d) not deflected by an electric field or a magnetic field

Q4. In the phenomenon of dispersion of light, the light wave of shortest wavelength is
(a) accelerated and refracted the most (b) slowed down and refracted the most
(c) accelerated and refracted the least (d) slowed down and refracted the least

Q5. Dolomite powder is applied in some agricultural lands. The purpose of applying it is to
(a) increase the pH of the soil (b) lower the pH of the soil
(c) increase the phosphorus content of the soil (d) increase the nitrogen content of the soil

Q6. In paper manufacturing, degumming of the raw material is done using
(a) sulphuric acid (b) bleaching powder (c) caustic soda (d) nitric acid

Q7. Methyl Isocyanate gas, which was involved in the disaster in Bhopal in December 1984, was used in the Union Carbide factory for production of:
(a) Dyes (b) Detergents (c) Explosives (d) Pesticides

Q8. The handle of pressure cookers is made of plastic because it should be made non-conductor of heat. The plastic used there is the first man-made plastic, which is
(a) Polythene (b) Terylene (c) Nylon (d) Bakelite

Q9. Which one of the following elements is essential for the formation of chlorophyll in green plants?
(a) Calcium (b) Iron (c) Magnesium (d) Potassium

Q10. Bleeding of gums, falling of teeth, fragile bones and delayed wound healing occur due to the deficiency the following vitamins?
(a) Vitamin C (b) Vitamin K (c) Vitamin D (d) Vitamin B

Q11. Syngamy results in formation of
(a) haploid zygote (b) diploid zygote
(c) non-motile male gametes (d) motile male gametes

Q12. The process of copying genetic information from one strand of DNA into RNA is termed as
(a) translation (b) transcription (c) replication (d) mutation

Q13. The Fourth Buddhist Council was held in Kashmir under the leadership of
(a) Bindusara (c) Kunal (b) Ashoka (d) Kanishka

Q14. The University of Nalanda was set-up by which Gupta ruler?
(a) Kumaragupta II (b) Kumaragupta I (c) Chandragupta II (d) Samudragupta

Q15. Who among the following first used the word 'Swarajya' in its political sense and accepted Hindi as the national language of India?
(a) Rammohan Roy (b) Swami Vivekananda (c) Mahatma Gandhi (d) Bal Gangadhar Tilak

Q16. Which chemical was an important symbol in our struggle for freedom?
(a) Glucose (b) Fertilizer (c) Medicine (d) Sodium chloride

Q17. Which one among the following books was authored by a lady of the Mughal Royal House?
(a) Akbar Nama (b) Babur Nama (c) Humayun Nama (d) Badshah Nama

Q18. The Dhamma propagated by Ashoka was
(a) the tenets of Buddhism
(b) a mixture of the philosophies of Ajivikas and Charvakas
(c) a system of morals consistent with the tenets of most of the sects of the time
(d) the religious policy of the state

Q19. The suppression of Indian language newspapers under the Vernacular Press Act of 1878 was caused by the criticism of
(a) lavish lifestyle of the English officials
(b) ill-treatment given to Indigo workers by their English masters
(c) inhuman approach of English officials towards the victims of the famine of 1876-77
(d) misuse of religious places of India by English officials

Q20. The country that shares longest border with India is
(a) China (b) Bangladesh (c) Nepal (d) Pakistan

Q21. Which one of the following is the example of subsistence farming?
(a) Shifting cultivation (b) Commercial farming
(c) Extensive and intensive farming (d) Organic farming

Q22. How many kilometres are represented by 1° of latitude?
(a) 321 km (b) 211 km (c) 111km (d) 91 km

Q23. Chinook is a
(a) cold wind in Europe (b) tropical desert storm in West Asia
(c) warm wind in North-America (d) depression to South Africa

Q24. Veliconda group of low hills is a structural part of
(a) Nilgiri Hills (b) Western Ghats (c) Eastern Ghats (d) Cardamom Hills

Q25. The humidity of air measured in percentage is called
(a) absolute humidity (b) specific humidity
(c) relative humidity (d) all of these

Q26. Albedo effect would be relatively higher in
(a) early morning and late evening (b) early morning only
(c) noon (d) late evening only

Q27. The audit reports of the Comptroller and Auditor General of India relating to the accounts of the Union shall be submitted to
(a) the President (b) the Speaker of the Lok Sabha
(c) the Prime Minister (d) the Vice President

Q28. The right to form associations and unions is a right
(a) guaranteed to everybody (b) to freedom guaranteed to citizens only
(c) to equality before law (d) to life and personal liberty

Q29. Which one of the following writs is issued by the Supreme Court to secure the freedom of a person upon unlawful arrest?
(a) Habeas Corpus (b) Mandamus (c) Certiorari (d) Quo Warranto

Q30. The Right to Education was added to the fundamental Rights in the Constitution of India through the
(a) Constitution (86th Amendment) Act, 2002 (b) Constitution (93th Amendment) Act, 2005
(c) Constitution (87th Amendment) Act, 2003 (d) Constitution (97th Amendment) Act, 2011

Q31. The category of Overseas citizens of India was entered in the citizenship Act of India through an amendement in the year:
(a) 1986 (b) 1992 (c) 1996 (d) 2003

Q32. After the general elections, the Protem Speaker is
(a) elected by the Lok Sabha (b) appointed by the President of India
(c) appointed by the Chief Justice of the Supreme Court (d) the senior most member of the Lok Sabha

Q33. The power to decide the date of an election to a State Legislative Assembly rests with the
(a) President of India (b) Chief Minister and his/her Cabinet
(c) Election Commission of India (d) Parliament

Q34. What is meant by 'Public Good"?
(a) A commodity produced by the Government it
(b) A commodity whose benefits are indivisibly spread among the entire community
(c) A Government scheme that benefits the poor households
(d) Any commodity that is very popular among general public

Q35. What is meant by price discrimination?
(a) Increase in price of a commodity over time
(b) A situation where the same product is sold to different consumers for different prices
(c) Subsidization of a product by the Government to sell at a lower price
(d) General decrease in price of a commodity over time

Q36. Which one of the following represents a progressive tax structure?
(a) Tax rate is the same across all incomes (b) Tax rate increases as income increases
(c) Tax rate decreases as income increases (d) Each household pays equal amount of tax

Q37. Which one of the following is India's first indigenously designed and developed long-range subsonic cruise missile which can be deployed from multiple platforms?
(a) Astra (c) Nirbhay (b) Akash (d) Shankhnaad

Q38. What is India's first Indigenous Aircraft Carrier (IAC) called?
(a) Vikrant (b) Virat (c) Vaibhav (d) Varaha

Q39. Which country has recently signed pact with India for purchase of BrahMos Missile?
(a) US (b) Philippines (c) Iran (d) Iraq

Q40. When was Olympic Anthem performed for the first time?
(a) 1904 (b) 1916 (c) 1896 (d) 1899

Q41. What defines the structure and authority of the Olympic Movement?
(a) International Olympic Committee (b) President of IOC
(c) Olympic Charter (d) Executive members of IOC

Q42. After whose name is the domestic cricket championship Ranji Trophy named?
(a) Maharaja Ranjit Singh (b) Maharaja Bhupinder Singh
(c) Maharaja Jam Saheb (d) None

Q43. Which country will host the 2028 Summer Olympic Games?
(a) United States of America (b) Japan (c) France (d) Brazil

Q44. The Rohingya are the minorities of
(a) Nepal (b) Bangla Desh (c) Myanmar (d) Bhutan

Q45. The rank of Major General in Indian Army is equivalent to
(a) Air Marshal in Indian Air Force (b) Rear Admiral in Indian Navy
(c) Air Commodore in Indian Air force (d) Commodore in Indian Navy

Q46. NATO has launched joint military exercise named DEFENDER-Europe 2021 in which country?
(a) USA (b) Albania (c) Croatia (d) North Macedonia

Q47. Which space agency has recently launched a new batch of 60 Starlink internet satellites into orbit?
(a) NASA (b) JAXA (c) SpaceX (d) Blue Origin

Q48. Carnivac-Cov, is the world's first Covid vaccine for animals, is developed in which country?
(a) China (b) Russia (c) UAE (d) USA

Q49. Desert Knight-21', which was making news recently, is the Military exercise between India and which country?
(a) Brazil (b) France (c) Japan (d) United Kingdom

Q50. Who has been appointed as the CEO of Unique Identification Authority of India (UIDAI).?
(a) Rajeev Kumar (b) Rajeev Sinha (c) Sanjay Agarwal (d) Saurabh Garg

PART–II : ENGLISH

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

Speech is great blessings but it can also be great curse, for while it helps us to make our intentions and desires known to our fellows, it can also if we use it carelessly, make our attitude completely misunderstood. A slip of the tongue, the use of unusual word, or of an ambiguous word, and so on, may create an enemy where we had hoped to win a friend. Again, different classes of people use different vocabularies, and the ordinary speech of an educated may strike an uneducated listener as pompous. Unwittingly, we may use a word which bears a different meaning to our listener from what it does to men of our own class. Thus speech is not a gift to use lightly without thought, but one which demands careful handling. Only a fool will express himself alike to all kinds and conditions to men.

Q51. The best way to win a friend is to avoid
(a) irony in speech (b) pomposity in speech
(c) verbosity in speech (d) ambiguity in speech

Q52. While talking to an uneducated person, we should use
(a) ordinary speech (b) his vocabulary
(c) simple words (d) polite language

Q53. If one used the same style of language with everyone, one would sound
(a) flat (b) boring (c) foolish (d) democratic

Q54. A 'slip of the tongue' means something said
(a) wrongly by choice (b) unintentionally
(c) without giving proper thought (d) to hurt another person

Q55. Speech can be curse, because it can
(a) hurt others (b) lead to carelessness
(c) create misunderstanding (d) reveal our intentions

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

Q56. PERENNIAL
(a) Sporadic (b) Instant (c) Persistent (d) Flaring

Q57. PROLIFIC
(a) Profane (b) Idle (c) Repudiate (d) Productive

Q58. REDOUBTABLE
(a) Owesome (b) Awful (c) Fear (d) Impression

Q59. RETICENT
(a) Verbose (b) Foul Smell (c) Taciturn (d) Entourege

Q60. VINDICTIVE
(a) Revenge (b) Humane (c) Spiteful (d) Spite

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

Q61. (a) Cease (b) Seize (c) Beseige (d) Beseach

Q62. (a) Carrier (b) Carreer (c) Courier (d) Barrier

Q63. (a) Personel (b) Personnel (c) Notional (d) Nationalist

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

Q64. ENGENDER
(a) Cause (b) Subdue (c) Conserve (d) Impound

Q65. OBVIATE
(a) Unclear (b) Remove (c) Disrespect (d) Include

Q66. VACUOUS
(a) Blank (b) Subsist (c) Bright (d) Inane

Q67. PROPITIATE
(a) Provoke (b) Placate (c) Disproportionate (d) Broadcast

Q68. OBDURATE
(a) Famous (b) Murky (c) Compliant (d) Homage

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

Q69. The window of our room _____ he rear.
(a) overlooks (b) opens (c) opposes (d) adjoins

Q70. In his address to the teachers, the Vice-Chancellor_____ certain measures being taken for improving the quality of college education.
(a) declined (b) directed (c) advised (d) highlighted

Q71. Nowadays there exists a spirit of _____ among the various departments of the University. This has led to a number of interdisciplinary research publications due to interaction of various research groups.
(a) co-operation (b) education (c) casteism (d) favouritism

Q72. Survival of mankind itself is in danger due to _____ of atomic weapons.
(a) perpetuation (b) regularisation (c) provocation (d) proliferation

Q73. India has the _____ of high saving and low growth rates.
(a) irony (b) similarity (c) difference (d) paradox

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

Q74. Hari alongwith his father (a)/ are going to Ambala (b)/ for purchasing some (c)/ books for his studies. (d)/ No error (e)/

Q75. When the plane landed (a)/ he found that (b)/ one of the wings (c)/ is damaged by a shell. (d)/ No error (e)/

Q76. She will not be (a)/ happy unless her friends (B)/ do not help her (c)/ in the examination. (d)/ No error (e)/

Q77. None of the two (a)/ sisters loves the (b)/ other due to (c)/ some misunderstandings. (d)/ No error (e)/

Q78. He will not (a)/ heave a sigh of relief (b)/ unless he will qualify (c)/ in the written test. (d)/ No error (e)/

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

Q79. There is no gainsaying the fact that the country is in difficulties.
(a) ignoring (b) hiding (c) forgetting (d) denying

Q80. Children complain about their parents' gifts. They should learn not to look a gift horse in the mouth.
(a) not to find goodness in the gifts (b) not to look at a horse's mouth
(c) not to find fault with the gifts received (d) not to ask for more gifts

Q81. Acquiring a job is a cakewalk for a student who has good academic performance coupled with good attitude.
(a) an easy achievement (b) walk away with a cake
(c) a difficult achievement (d) a walkway made with cakes

Q82. Let sleeping dogs lie.
(a) Do not make friends with enemies (b) Do not bring up an old controversial issue
(c) Dogs can raise tempers (d) Do not allow dogs to stand

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

Q83. A style in which a writer makes a display of his knowledge
(a) Pedantic (b) Verbose (c) Pompous (d) Ornate

Q84. State in which the few govern the many
(a) Monarchy (b) Oligarchy (c) Plutocracy (d) Autocracy

Q85. A person who insists on something
(a) Disciplinarian (b) Stickler (c) Instantaneous (d) Boaster

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: Smoke oozed up between the planks.
P : Passengers were told to be ready to quit the ship.
Q : The rising gale fanned the smouldering fire.
R : Everyone now knew there was fire on board.
S : Flames broke out here and there.
S6: Most people bore the shock bravely.
The Proper sequence should be:
(a) SRQP (b) QPSR (c) RSPQ (d) QSRP

Q87. S1: You know my wife, Madhavi, always urged me to give up smoking.
P : I really gave it up.
Q : And so When I went to jail I said to myself I really must give it up, if for no other reason than of being self-reliant.
R : When I emerged from jail, I wanted to tell her of my great triumph.
S : But when I met her, there she was with a packet of cigarettes.
S6: poor girl!.

The Proper sequence should be:
(a) PSRQ (b) SPQR (c) QPRS (d) RSPQ

Q88. S1: When a satellite is launched, the rocket begins by going slowly upwards through the air.
P : However, the higher it goes, the less air it meets.
Q : As the rocket goes higher, it travels faster.
R : For the atmosphere becomes thinner.
S : As a result there is less friction.
S6: Consequently, the rocket still does not become too hot.
The Proper sequence should be:
(a) QPRS (b) QSPR (c) PQRS (d) PQSR

Q89. S1: A father having offered to take the baby out in a perambulator, was tempted by the sunny morning to slip into a pub for a glass of beer.
P : Indignant at her husband's behaviour, she decided to teach him a lesson.
Q : She wheeled away the pram.
R : A little later, his wife came by, where to her horror, she discovered her sleeping baby.
S : Leaving the pram outside, he disappeared inside the bar.
S6: She waited for him, anticipating the white face and quivering lips which would soon appear with the news that the baby had been stolen.
The Proper sequence should be:
(a) SRPQ (b) RQPS (c) SPQR (d) PQSR

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

Q90. He could not *look* anything in the dark room.
(a) look at (b) see (c) see through (d) No improvement

Q91. The greatest thing in style is to have a *use* of metaphor.
(a) knowledge (b) command (c) need (d) No improvement

Q92. While crossing the highway a five year old child was knocked *out* by a passing car.
(a) away (b) up (c) down (d) No improvement

Q93. hoping not to be disturbed, I sat down in my easy chair to read the book. *I won as a prize.*
(a) I had won as a prize (b) I have won as prize (c) I had to win as a prize (d) No improvement

Q94. More than one person *was killed* in accident.
(a) were killed (b) are killed (c) have been killed (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. What one must do, one must do property.
(a) What must be done, must be done properly. (b) It must be done properly what one must do.
(c) It must be done hat one must do properly. (d) One must do properly what has to be done.

Q96. What one must do, one must do properly.
(a) What must be done, must be done properly. (b) It must be done properly what one must do.
(c) It must be done what one must do properly. (d) One must do properly what has to be done.

Q97. He was congratulated by his teacher on his brilliant success in the recent examination.
(a) His teacher congratulated him on his brilliant success in the recent examination.
(b) His teacher congratulated him for his success in the examination.
(c) His teacher congraulated him on his success.
(d) His teacher congratulated him.

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

Q98. Hardly had my brother descended from the plane when the people (P)/ waved and cheered (Q)/ who had come to receive him (R)/ from the lounge (S)/
(a) P R Q S (b) P Q R S (c) S P Q R (d) P R S Q

Q99. My friend when he was going to his office (P)/ met with an accident (Q)/ on his scooter (R)/ due to rash driving (S)/
(a) P Q R S (b) P R Q S (c) S R Q P (d) Q S R P

Q100. The boy said I am not going to the school (P)/ with my friends in the class room (Q)/ where my teacher scolds me (R)/ when I want to play (S)/
(a) P Q R S (b) P S Q R (c) S Q P R (d) P R S Q

PART–I : GENERAL KNOWLEDGE

ANSWER PRACTICE TEST PAPER - 2

1. (c) constant acceleration
2. (d) convex mirrors
3. (d) not deflected by an electric field or a magnetic field
4. (b) slowed down and refracted the most
5. (a) increase the pH of the soil
6. (b) bleaching powder
7. (d) Pesticides
8. (d) Bakelite
9. (c) Magnesium
10. (a) Vitamin C
11. (b) diploid zygote
12. (b) transcription
13. (d) Kanishka
14. (b) Kumaragupta I
15. (d) Bal Gangadhar Tilak
16. (d) Sodium chloride
17. (c) Humayun Nama
18. (c) a system of morals consistent with the tenets of most of the sects of the time
19. (c) inhuman approach of English officials towards the victims of the famine of 1876-77
20. (b) Bangladesh
21. (a) Shifting cultivation
22. (c) 111km
23. (c) warm wind in North-America
24. (c) Eastern Ghats
25. (c) relative humidity
26. (a) early morning and late evening
27. (a) the President
28. (b) to freedom guaranteed to citizens only
29. (a) Habeas Corpus
30. (a) Constitution (86th Amendment) Act, 2002
31. (d) 2003
32. (b) appointed by the President of India
33. (c) Election Commission of India
34. (b) A commodity whose benefits are indivisibly spread among the entire community
35. (b) A situation where the same product is sold to different consumers for different prices
36. (b) Tax rate increases as income increases
37. (b) Akash
38. (a) Vikrant
39. (b) Philippines
40. (c) 1896
41. (c) Olympic Charter
42. (c) Maharaja Jam Saheb
43. (a) United States of America
44. (c) Myanmar
45. (b) Rear Admiral in Indian Navy
46. (b) Albania
47. (c) SpaceX
48. (b) Russia
49. (b) France
50. (d) Saurabh Garg

PART–II : ENGLISH

ANSWER PRACTICE TEST PAPER - 2

51. (d) ambiguity in speech
52. (b) his vocabulary
53. (c) foolish
54. (c) without giving proper thought
55. (c) create misunderstanding
56. (c) Persistent
57. (d) Productive
58. (a) Owesome
59. (c) Taciturn
60. (c) Spiteful
61. (d) Beseach
62. (b) Carreer
63. (a) Personel
64. (d) Impound
65. (d) Include
66. (c) Bright
67. (a) Provoke
68. (c) Compliant
69. (a) overlooks
70. (d) highlighted
71. (a) co-operation
72. (d) proliferation
73. (d) paradox
74. (b) are going to Ambala
    Hari alongwith his father is going to Ambala for purchasing some books for his studies.
    Explanation: Prepositional phrases like 'along with', 'as well as' do not change the number of the subject. In this case the subject Hari is singular.
75. (d) is damaged by a shell
    When the plane landed he found that one of the wings had been damaged by a shell.
    Explanation: The past perfect (had been) is used when we are already discussing the past and want to refer back to an earlier period in time.

76. (e) No error
She will not be happy unless her friends do not help her in the examination.
Explanation: Use of negative with unless is incorrect.

77. (a) None of the two
Neither of the two sisters loves the other due to some misunderstandings.
Explanation: Neither is used when referring to two items.

78. (c) unless he will qualify
He will not heave a sigh of relief unless he qualifies in the written test..
Explanation: Simple present is used with future constructions.

79. (d) denying
80. (c) not to find fault with the gifts received
81. (a) an easy achievement
82. (b) Do not bring up an old controversial issue
83. (a) Pedantic
84. (b) Oligarchy
85. (b) Stickler
86. (a) SRQP
87. (c) QPRS
88. (a) QPRS
89. (a) SRPQ
90. (b) see
91. (a) knowledge
92. (c) down
93. (a) I had won as a prize
94. (d) No improvement
95. (a) What must be done, must be done properly.
96. (a) What must be done, must be done properly.
97. (a) His teacher congratulated him on his brilliant success in the recent examination.
98. (a) P R Q S
99. (b) P R Q S
100. (d) P R S Q