General Knowledge Sample Paper - 3

SECTION-III : GENERAL TEST

1. Debenture holders of a company are its
   (a) Shareholders
   (b) Creditors
   (c) Debtors
   (d) Directors
2. The terms 'Bull' and 'Bear' are associated with
   (a) Banking
   (b) Foreign Trade
   (c) Stock Market
   (d) Internet Trade
3. The State Election Commission conducts, controls and supervises Municipal elections under
   (a) Article 240 (a)
   (b) Article 241 (b)
   (c) Article 243 (K)
   (d) Article 245 (d)
4. Which one of the following judgements stated that 'Secularism' and 'Federalism' are the basic features of the Indian Constitution?
   (a) Keshavananda Bharati case
   (b) S.R. Bommai case
   (c) Indira Sawhney case
   (d) Minerva Mills case
5. India and which country have agreed to undertake the Indus Waters Treaty tours in the Indus basin on both sides, to resolve issues on the various hydroelectric projects?
   (a) Afghanistan
   (b) Pakistan
   (c) China
   (d) Bangladesh
6. Who was the Chief Architect of SAARC?
   (a) Zia-ur-Rahman
   (b) General Zia-ul-Haq
   (c) Rajiv Gandhi
   (d) Jayawardene
7. The first Atom bomb was dropped on Hiroshima on
   (a) August 6, 1945
   (b) August 9, 1945
   (c) August 9, 1946
   (d) August 6, 1942
8. 'Indica' was authored by
   (a) Kautilya
   (b) Megasthenes
   (c) Aryabhatta
   (d) Seleucus
9. The slogan of the French Revolution was
   (a) One nation, one leader and one flag
   (b) Government of the people, by the people and for the people
   (c) Liberty, equality and fraternity
   (d) None of these
10. The world's largest island is
    (a) Greenland
    (b) Madagascar
    (c) New Zealand
    (d) Sri Lanka
11. The humidity of air depends on
    (a) Temperature
    (b) Location
    (c) Weather
    (d) All of the above
12. Tropical rain forest is characterised by
    (a) Absence of trees
    (b) Least productivity
    (c) Maximum biodiversity
    (d) Minimum biodiversity
13. Enzymes are
    (a) Proteins (b) Minerals
    (c) Oils (d) Fatty acids
14. Which of the following have the same unit?
    (a) Work and power
    (b) Torque and moment of inertia
    (c) Work and torque
    (d) Torque and angular momentum
15. Loudness of sound depends on
    (a) Frequency
    (b) Wavelength
    (c) Amplitud e
    (d) Pitch
16. The popular search engine "Google" derives its name from the word "Googol". What does the word mean?
    (a) To search
    (b) To index
    (c) To crawl
    (d) The numeral one followed by a hundred zeros
17. The vitamin which is very labile and easily destroyed during cooking as well as storage is vitamin
    (a) D (b) C
    (c) B_6 (d) K
18. Number of neutrons in an atom of hydrogen is
    (a) One (b) Zero
    (c) Two (d) Three
19. When the moon completely covers the sun, it is known as
    (a) the Antumbra
    (b) the Umbra
    (c) the Penumbra
    (d) None of these
20. Why is the South Pole colder than the North Pole?
    (a) High altitude
    (b) More rainfall
    (c) Strong winds
    (d) Away from the sun
21. Which of the following countries has asked India to return the famous 'Dancing Girl' statue from Mohenjodaro?
    (a) Bangladesh
    (b) Bhutan
    (c) China
    (d) Pakistan
22. Who invented aeroplane?
    (a) Edison
    (b) Stevenson
    (c) Hoffman
    (d) Wright Brothers
23. Which Indian cricketer has written the book, 'One Day Wonders'?
    (a) Kapil Dev
    (b) Sachin Tendulkar
    (c) Sunil Gavaskar
    (d) Ravi Shastri
24. Which is the holy book of the Sikh religion?
    (a) Bhagwad Gita
    (b) Baani
    (c) Gurmukhi
    (d) Guru Granth Sahib

25. Which of the following trophies is not awarded in cricket?
(a) Deodhar Trophy
(b) Ashes
(c) Ryder Cup
(d) Ranji Trophy

Directions (Q. 26-29): Select the related word/letters/number from the given alternatives.

26. Sheep : Flock : : Grapes : ?
(a) Bunch (b) Stock
(c) Hectare (d) Land

27. HEK : MJP : : NKQ : ?
(a) SRX (b) SQY
(c) SPV (d) SUW

28. OPQ : MQO : : VWX : ?
(a) TXW (b) TXV
(c) UTS (d) USR

29. 16 : 63 :: 5 : ?
(a) 19 (b) 36
(c) 49 (d) 29

Directions (Q. 30-33): Select the odd word/letters/number/number pair from the given alternatives.

30. (a) Herd (b) Stock
(c) Gang (d) Cub

31. (a) AZ (b) CX
(c) BY (d) DV

32. (a) 1728 (b) 4096
(c) 5832 (d) 2746

33. (a) 655 (b) 360
(c) 826 (d) 995

Directions (Q. 34-36): A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

34. CD, GH, KL, ?
(a) PN (b) NO
(c) NP (d) OP

35. EDCB, IHGF, MLKJ, ?
(a) QPON (b) QLNO
(c) KNOL (d) LMON

36. 13, 21, 48, 112, ?
(a) 237 (b) 280
(c) 255 (d) 290

37. In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.
Statements:
(I) Pre-school culture is prevailing in all parts of the country now.
(II) Parents have less time to spend with their children so toddlers are admitted to school at a very early age.
Conclusions:
(I) Number of pre-schools is increasing in all parts of country.
(II) Children at a very early age are exposed to the outer world resulting in changes in behaviour patterns.
(a) Only conclusion II follows
(b) Conclusion I and II both follow
(c) Neither I nor II follow
(d) Only conclusion I follows

38. M, N, O, P and Q are standing in a row. P is at an end and third to the right of O. N is to the right of Q but left of P. Who is at the left end?
(a) M (b) N
(c) O (d) P

39. Arrange the given words in the sequence in which they occur in the dictionary.
i. Misleader ii. Monarchy
iii. Mobile iv. Manage
v. Movies
(a) i, iv, iii, ii, v (b) iv, i, iii, v, ii
(c) i, iii, ii, v, iv (d) iv, i, iii, ii, v

40. In a certain code language, "FIRMLY" is written as "TKHWJK". How is "PUBLIC" written in that code language?
(a) DOXRAG
(b) DWRAGJ
(c) DWRAGK
(d) DWRAHJ

41. In the following questions, select the missing number from the given series:

19	29	45
4	5	3
5	6	?
3	4	6

(a) 5 (b) 7
(c) 4 (d) 3

42. If 52*14= 33, 44*8= 26 and 86*14 = 50, then what will 43*15 be?
(a) 43 (b) 58
(c) 26 (d) 29

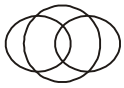
43. In the following question, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?
ab_d_bb_a_bd
(a) badd (b) babd
(c) badb (d) abdd

44. Starting from a point, Suraj walked 20 m south, then he turned left and walked 18 m, he again turned left and walked 18 m, then he turned right and walked 10 m. How far and in which direction is he now from the starting point?
(a) √784 m in north
(b) √788 m in south-east
(c) √786 m in south-west
(d) √790 m in north-west

45. Rahul said, "The boy in that picture is the brother of the daughter of my paternal grandfather's only son". How is the boy in the picture related to Rahul?
(a) Cousin (b) Father
(c) Nephew (d) Brother

46. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?
Questio ns figure:

Answer figures:
(a) 
(b) 
(c) 
(d) 

47. Identify the diagram that best represents the relationship among the given classes.
Student, Badminton Player, Girl
(a) 

(b) 

(c) 

(d) 

48. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

Question figures:

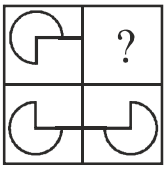
Answer figures:

(a)  (b) 

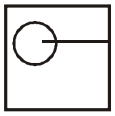
(c)  (d) 

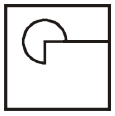
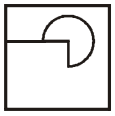
49. Which answer figure will complete the pattern in the question figure?

Question Figure:



Answer Figures:

(a)  (b) 

(c)  (d) 

50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, 'U' can be represented by 10, 33 etc. and 'N' can be represented by 75, 89 , etc. Similarly, you have to identify the set for the word 'BOARD'

Matrix-I

	0	1	2	3	4
0	R	B	U	P	A
1	U	A	R	B	P
2	P	R	U	A	B
3	A	P	B	U	R
4	B	U	A	R	P

Matrix-II

	5	6	7	8	9
5	D	N	S	H	O
6	S	D	O	N	H
7	N	O	H	D	S
8	H	S	D	O	N
9	O	H	N	S	D

(a) 32, 76, 04, 21, 55
(b) 01, 66, 11, 43, 99
(c) 40, 59, 41, 00, 66
(d) 30, 67, 42, 34, 78

51. The valu e of x for which the expressions 11 x + 7 and 17 x – 1 become equal is:
(a) – 4/3 (b) 3/4
(c) 4/3 (d) – 3/4

52. A wholesaler sells a watch to a retailer at a gain of 36% and the retailer sells it to a customer at a loss of 25%. If the customer pays ₹ 2499, what had it cost the wholesaler?
(a) ₹ 2548 (b) ₹ 2450
(c) ₹ 3123 (d) ₹ 2352

53. A student multiplied a number by 11/13 instead of 13/11. What is the percentage error in the calculation?
(a) 39.67 percent
(b) 28.4 percent
(c) 14.2 percent
(d) 19.83 percent

54. 5 × [–0.6 (2.8 + 1.2)] of 0.3 is equal to
(a) – 1.44 (b) – 1.08
(c) – 1.2 (d) – 3.6

55. If (x + y) : (x – y) = 5 : 2, find the value of (4x + 5y)/(x – 4y)
(a) 43/5 (b) – 5/43
(c) – 43/5 (d) 5/43

56. P and Q can do a project in 25 and 50 days respectively. In how many days can they complete 18% of the project if they work together?
(a) 6 days (b) 3 days
(c) 12 days (d) 9 days

57. In a class of 56 students there are 21 girls. The average weight of these girls is 56 kg and average weight of the full class is 62.875 kgs. What is the average weight of the boys of the class?
(a) 69.75 kg (b) 72.5 kg
(c) 67 kg (d) 65 kg

58. A missile travels at 1296 km/h. How many metres does it travel in one second ?
(a) 320 metres (b) 360 metres
(c) 341 metres (d) 334 metres

59. A bag has ₹ 11 in the form of 1-rupee, 50-paise and 10-paise coins in the ratio of 4 : 2 : 5. Find the number of 50-paise coins.
(a) 10 (b) 8
(c) 4 (d) 2

60. Marked price of an item is ₹ 800. On purchase of 1 item, discount is 15%, on purchase of 4 items discount is 38%. Rajshri buys 5 items, what is the effective discount.
(a) 33.4 percent
(b) 16 percent
(c) 9 percent
(d) 17.5 percent

61. The sum of a non-zero number and thrice its reciprocal is 13/2. Find the number.
(a) 6 (b) 7
(c) 8 (d) 9

62. ΔDEF is similar to ΔGHI. Length of DE is 16 cm and length of the corresponding side GH is 25 cm. What is the ratio of areas of ΔDEF: ΔGHI?
(a) 4 : 5 (b) 16 : 25
(c) 256 : 625 (d) 25 : 16

63. Find the sum of the measures of all the interior angles of a polygon having 10 sides.
(a) 2520° (b) 2880°
(c) 1440° (d) 3240°

64. One diagonal of a rhombus is half the other. If the length of the side of the rhombus is 10 cm, what is the area of the rhombus?
(a) 40 sq. cm (b) 20 sq. cm
(c) 100 sq. cm (d) 80 sq. cm

65. The curved surface area of a hemisphere is 110.88 sq cm. and volume is 155.232 cubic cm, find its radius?
(a) 8.4 cm (b) 1.4 cm
(c) 4.2 cm (d) 2.1 cm

66. If $2\sec^2 A = x$, then the value of x is :
(a) 1/(1 + cos A) + 1/(1 – cos A)
(b) 1/(1 + tan A) + 1/(1 + sin A)
(c) 1/(1 + sin A) + 1/(1 – sin A)
(d) 1/(1 + cot A) + 1/(1 – cos A)

67. What is the compound interest (in ₹) for 1 year on a sum of ₹ 20000 at the rate of 40% per annum compounded half yearly ?
(a) 8000 (b) 8650
(c) 8750 (d) 8800

68. A train of length 100 metre crosses another train of length 150 metre, running on a parallel track in the opposite direction in 9 seconds. If the speed of train having length 150 metre is 40 km/hr, then what is the speed (in km/hr) of the other train ?
(a) 30 (b) 48
(c) 50 (d) 60

69. The present population of a town is 26010. It increases annually at the rate of 2%. What was the populationof town two years ago?
(a) 25000 (b) 25100
(c) 25200 (d) 25500

70. A shopkeeper sells a table at a discount of 20% and earns a profit of 60%. If he sells the same table at 40% discount, then what will be his new profit percent?
(a) 20 (b) 30
(c) 35 (d) 40

71. One of the diagonals of a rhombus is 70% of the other diagonal. What is the ratio of area of rhombus to the square of the length of the larger diagonal?
(a) 3 : 10 (b) 3 : 20
(c) 7 : 20 (d) 7 : 10

72. A is 1.5 times efficient than B therefore takes 8 days less than B to complete a work. If A and B work on alternate days and A works on first day, then in how many days the work will be completed?
(a) 17 (b) 19
(c) 19.5 (d) 21

Directions (Q. 73-75) : The table below shows the distribution of number of people living in 8 different countries and the per capita income of countries. The total population of these countries taken together is 200 crore.'
Per capita income = total GDP of country/ population of the country.

Country	Distributionof numberof people	Percapita income (incrore dollars)
1	12%	11850
2	24%	5350
3	15%	9900
4	17%	4840
5	7%	2260
6	6%	6920
7	11%	3190
8	8%	10410

73. What is the difference (in crores) between population of the most and the least populated country?
(a) 18 (b) 32
(c) 34 (d) 36

74. What is the total GDP (in crore dollars) of country 5?
(a) 27120 (b) 31640
(c) 38280 (d) 44660

75. What is the total GDP (in crore dollars) for the country with the third lowest per capita income?
(a) 181900 (b) 108464
(c) 145200 (d) 164560

SECTION-III : GENERAL TEST

1. (b) Companies issue debentures instead of shares to extend their business. These debentures are issue to borrow loan from general public; interest is paid on the borrowed money to the debenture holders. So a debenture holder is essentially a creditor who simply gives loan to the company.

2. (c)The terms 'bull' and 'bear' describe upward and downward trends respectively of the stock market. A bear market refers to a decline in prices, usually for a period of a few months, in a single security or asset, group of securities or the securities market as a whole. A bull market is when prices are rising.

3. (c)According to Article 243 (K), the superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to local bodies shall be vested in a State Election Commission consisting of a State Election Commissioner to be appointed by the Governor.

4. (b) In the S.R. Bommai Case v. Union of India (1994), Juslice Sawant and Kuldip Singh observed that federalism and secularism was an essential feature of our Constitution and were a part of basic structure. In this case, the Supreme Court discussed at length provisions of Article 356 of the Constitution of India.

5. (b) On September 1, 2018, India and Pakistan agreed to undertake the Indus Waters Treaty tours in the Indus basin on both sides. This agreement came after the two-day high-level bilateral talks on the Indus Waters Treaty in Lahore in August 18, 2018. Important points regarding the treaty: Decision on strengthening the role of the Permanent Indus Commission (PIC) for matters under the 1960 Treaty was taken. On implementation of the treaty on hydroelectric projects including Pakal Dul (1000 MW) and Lower Kalnai (48 MW) in the state of Jammu and Kashmir. India has invited Pakistani experts to visit sites of Pakal Dul and Lower Kalnai hydropower projects on Chenab river in September 2018.

6. (a) Zia-ul-Rehman, the former President of Bangladesh, was the chief architect of SAARC. It was he who first proposed a trade bloc in the South Asian region.

7. (a) A uranium gun-type atomic bomb (Little Boy) was dropped on Hiroshima on August 6, 1945. It was followed by a plutonium implosion-type bomb (Fat Man) on the city of Nagasaki on August 9, 1945. The twin bombings led to Japan's surrender in the Second War.

8. (b) Indica was written by Megasthenes, a Greek historian, philosopher, and statesman during the Roman period. He stayed as a Greek envoy to the court of Chandragupta Maurya.

9. (c) The famous slogan of the French Revolution was "liberty, equality, fraternity". Many other nations have adopted the French slogan of "Liberty, Equality and Fraternity" as an ideal. These words appear in the preamble to the Constitution of India, enforced in 1950.

10. (a) Greenland is the world's largest island covering 2,175,597 square kilometers. New Guinea and Borneo come next. Greenland is located between the Arctic Ocean and the North Atlantic Ocean, northeast of Canada and northwest of Iceland.

11. (d) Humidity is the amount of water vapor in the air. Humidity depends on water vaporization, and condensation, which in turn, mainly depends on temperature. Temperature, in turn, is affected by weather and location.

12. (c) Tropical rainforests exhibit high levels of biodiversity. Around 40% to 75% of all biotic species are indigenous to the rainforests. Rainforests are home to half of all the living animal and plant species on the planet. Two-thirds of all flowering plants can be found in rainforests.

13. (a) Enzymes are biological molecules (proteins) that act as catalysts and help complex reactions occur everywhere in life. They are in general globular proteins. They speed up reactions by providing an alternative reaction pathway of lower activation energy.

14. (c) The SI unit of work is the Newton-metre or joule (J). A Newton meter is also the SI unit of torque (also called "moment" or "moment of force").

15. (c) Loudness depends on the amplitude of the sound wave. The larger the amplitude the more energy the sound wave contains therefore the louder the sound. The pitch of a note depends on the frequency of the source of the sound.

16. (d) Google derived its name from the word "googol", a term coined by the nine-year-old Milton Sirotta, nephew of the American mathematician Edward Kasner. The story goes, Kasner had asked his nephew to invent a name for a very large number - ten to the power of one hundred (the numeral one followed by 100 zeros), and Milton called it a googol.

17. (b) Vitamin C is quite unstable when cooked or stored improperly. It is very liable and easily destroyed during cooking as well as storage. It is most susceptible to heat destruction.

18. (b) Neutrons are the particles in an atom that have-a neutral charge. So, if an atom has equal numbers of electrons and protons, the charges cancel each other out and the atom has a neutral charge. Hydrogen (H) has 1 proton and 1 electron; it does not have any neutron in its nucleus.

19. (b) A solar eclipse occurs when the moon crosses the path between the sun and the earth. The darkest shadow (where the sun is completely covered) is called the umbra. The umbra is narrow at the distance of the Earth, and a total eclipse is observable only within the narrow strip of land or sea over which the umbra passes. The partial shadow is called the penumbra.

20. (a) Both the Arctic (North Pole) and the Antarctic (South Pole) are cold because they don't get any direct sunlight. What makes the South Pole so much colder than the North Pole is that it sits on top of a very thick ice

sheet, which itself sits on a continent. The surface of the ice sheet at the South Pole is more than 9,000 feet in elevation—more than a mile and a half above sea level. This elevation makes the South Pole much colder than the North Pole, which sits in the middle of the Arctic Ocean (National Geographic).

21. (d) The Sindh government of Pakistan, in February 2014, requested Islamabad for asking India to return the famous statue of the Dancing Girl, which is in possession of the Indian authorities since 1946. The 10.8-cm bronze statue, made in 2500 BC, is on display at the National Museum in New Delhi.

22. (d) The Wright brothers, Orville and Wilbur, were two American brothers, who are credited with inventing and building the world's first successful airplane on December 17, 1903. From 1905 to 1907, the brothers developed their flying machine into the first practical fixed-wing aircraft.

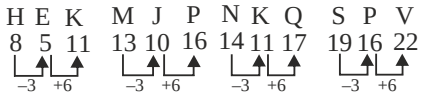
23. (c) 'One Day Wonders' is a book written by the legendary Indian cricketer Sunil Manohar Gavaskar in 1985. The book is about Indian team's remarkable journey on the road to winning the "Benson and Hedges World Championship of Cricket' ODI tournament in Australia in 1985.

24. (d) Guru Granth Sahib is the central religious text of Sikhism, considered by Sikhs to be the final, sovereign guru among the lineage of 11 Sikh Gurus of the religion. It is a voluminous text of 1430 pages, compiled and composed during the period of Sikh gurus from 1469 to 1708.

25. (c) The Ryder Cup is a biennial men's golf competition between teams from Europe and the United States. The competition is contested every two years with the venue alternating between courses in the USA and Europe. The Ryder Cup is named after the English businessman Samuel Ryder who donated the trophy.

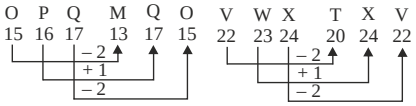
26. (a)As, Sheep are in flock. Similarly, grapes will be in bunch.

27. (c)



Finally, the related word is SPV.

28. (b) As,



similarly,

Finally, the missing set of letters is TXV.

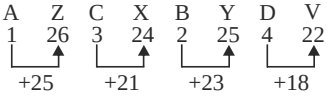
29. (a) As, $16 \times 4 - 1 = (64 - 1) = 63$.

Similarly $5 \times 4 - 1 = (20 - 1) = 19$

The missing number is 32.

30. (d) The odd word is cub.

31. (d)



Finally, the odd word is DV.

32. (d) $728 = (12)^3$, $4096 = (16)^3$,

$5832 = (18)^3$, $2746 = (14)^3 + 2$

Finally, the odd number is 2746.

33. (c) 655, 360, 995 are divisible by 5 and 826 is not divisible by 5. So the odd number is 826.

34. (d) $C \xrightarrow{+4} G \xrightarrow{+4} K \xrightarrow{+4} O$

$D \xrightarrow{+4} H \xrightarrow{+4} L \xrightarrow{+4} P$

Finally, the missing set of letters is OP.

35. (a) $E \xrightarrow{+4} I \xrightarrow{+4} M \xrightarrow{+4} Q$

$D \xrightarrow{+4} H \xrightarrow{+4} L \xrightarrow{+4} P$

$C \xrightarrow{+4} G \xrightarrow{+4} K \xrightarrow{+4} O$

$B \xrightarrow{+4} F \xrightarrow{+4} J \xrightarrow{+4} N$

Finally, the missing term is QPON.

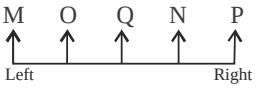
36. (a)

$$13 \xrightarrow[+(2)^3]{} 21 \xrightarrow[+(3)^3]{} 48 \xrightarrow[+(4)^3]{} 112 \xrightarrow[+(5)^3]{} \boxed{237}$$

Finally, the missing number is 237.

37. (d) According to statement of the question only conclusion (I) follows.

38. (a)

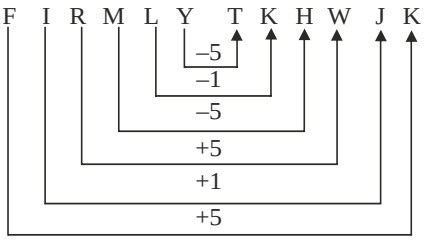


So, M is at the left end.

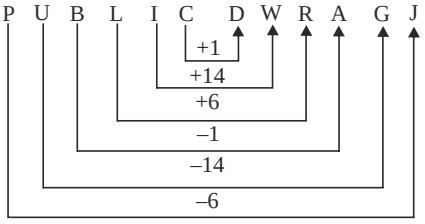
39. (d) According to dictionary, the sequence of words:

(iv) Manage, (i) Misleader, (iii) Mobile (v) Monarchy, (ii) Movies.

40. (b) As,



Similarly



41. (b) As, $3 \times 5 + 4 = 19$

$4 \times 6 + 5 = 29$

Similarly

$6 \times ? + 3 = 45$

$$\therefore \quad ? = \frac{45 - 3}{6} = 7$$

Finally, the missing number is 7.

42. (d) $52 * 14 = 33$,

$44 * 8 = 26$

$$\frac{52 + 14}{2} = \frac{66}{2} = 33$$

$$\frac{44 + 8}{2} = \frac{52}{2} = 26$$

and $86 * 14 = 50$

$$\frac{86 + 14}{2} = \frac{100}{2} = 50$$

Similarly

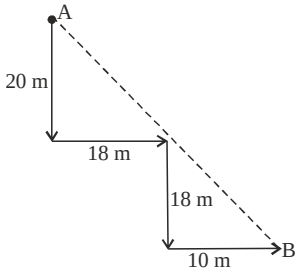
$43 * 15 = ?$

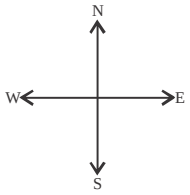
$$\frac{43 + 15}{2} = \frac{58}{2} = \boxed{29}$$

43. (c) ab b d/ a b b d / a b bd

Finally the set of letters, badb complete the series.

44. (b)





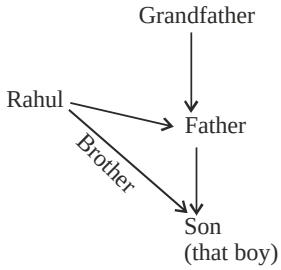
$\therefore$ AB $= \sqrt{(20-18)^2+(18-10)^2}$

$= \sqrt{(2)^2+(28)^2}$

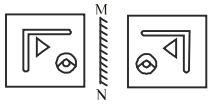
$= \sqrt{4+784}$

$= \sqrt{788}$ m and the direction is south-east.

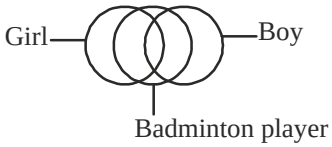
45. (d)



Finally, the boy in the picture will be brother of Rahul.

46. (a) 

47. (a) The relationship among the student, badminton player and girl is,



48. (c) A piece of paper is folded and punched. A paper will appear when opened as given 

49. (d) Answer figure (d) will Complete the pattern of the question figure.

50. (a) B = 01, 13, 24, (32), 40

O = 59, 67, (76), 88, 95

A = (04), 11, 23, 30, 42

R = 0, 0, 12, (21), 34, 43

D = (55), 66, 78, 87, 99

The set of numbers 32, 76, 04, 21, 55 are suitable for the word 'BOARD'

51. (c) $11x + 7 = 17x - 1$

$\Rightarrow 17x - 11x = 7 + 1$

$\Rightarrow 6x = 8$

$\Rightarrow x = \frac{8}{6} = \frac{4}{3}$

52. (b) Let the cost price of wholesaler be x

S.P. of wholesaler

$= x \times \frac{136}{100} = \frac{34}{25}x$

C.P. of retailer $= \frac{34}{25}x$

S.P. of retailer $= \frac{34}{25}x \times \frac{75}{100}$

$= \frac{102}{100}x$

$2499 = \frac{102}{100} \times x$

$\Rightarrow x = \frac{2499 \times 100}{102}$

$= \frac{2499 \times 50}{51} = 2450$

Hence, C.P . of wholesaler is ₹ 2450.

53. (b) Let the number be x.

Percentage error

$= \frac{\frac{13}{11}x - \frac{11}{13}x}{\frac{13}{11}x} \times 100\%$

$= \frac{\frac{48}{11 \times 13}x}{\frac{13}{11}x} \times 100\%$

$= \frac{48x \times 11}{11 \times 13 \times 13} \times 100\%$

$= \frac{4800}{169}\% = 28.4\%$

54. (d) $5 \times [-0.6\,(2.8 + 1.2)]$ of 0.3

$= 5 \times [-0.6 \times 4] \times 0.3$

$= -12.0 \times 0.3 = -3.6$

55. (c) $\frac{x+y}{x-y} = \frac{5}{2}$

$\Rightarrow 2x + 2y = 5x - 5y$

$\Rightarrow 3x = 7y$

$\Rightarrow \frac{x}{y} = \frac{7}{3}$

$$\frac{4x+5y}{x-4y} = \frac{4.\left(\frac{x}{y}\right)+5}{\left(\frac{x}{y}\right)-4}$$

$$= \frac{4 \times \frac{7}{3}+5}{\frac{7}{3}-4} = \frac{\frac{28+15}{3}}{\frac{7-12}{3}} = \frac{43}{-5}$$

56. (b) (P + Q)'s 1 day's work

$= \frac{1}{25} + \frac{1}{50} = \frac{2+1}{50} = \frac{3}{50}$

Time taken by both to complete whole work

$= \frac{50}{3} = 16\frac{2}{3}$ days

Time taken to complete 18%

$= \frac{50}{3} \times \frac{18}{100} = 3$ days.

57. (c) Total weight of 21 girls

$= 56 \times 21 = 1176$ kg

Total weight of full class

$= 62.875 \times 56 = 3521$ kg

Total weight of (56 – 21)

= 35 boys

$= (3521 - 1176) = 2345$ kg

= Average weight of 35 boys

$= \frac{2345}{35} = 67$ kg

58. (b) Speed $= \frac{\text{Distance}}{\text{Time}} = 1296$ km/h

$= 1296 \times \frac{5}{18}$ m /sec

$= \frac{216}{3} \times 5 = 72 \times 5$

= 360 m/sec

Therefore, the missile will cover 360 metres in one second.

59. (c) Let the number of coins be 4x, 2x and 5x.

According to question,

$4x \times 1 + 2x \times \frac{50}{100} + 5x \times \frac{10}{100}$

= 11

$4x + x + \frac{x}{2} = 11$

$11x = 11 \times 2$

$\Rightarrow \quad x = 2$

Hence, the number of 50 P coins

$= 2 \times 2 = 4$

60. (a) S.P. of 1 item $= 800 \times \frac{85}{100}$

$= ₹\ 680$

S.P. of 4 items

$= 3200 \times \frac{100 - 38}{100}$

$= 3200 \times \frac{62}{100}$

$= ₹\ 1984$

61. (a) Let the number be x.

According to questions

$x + \frac{3}{x} = \frac{13}{2}$

$\Rightarrow \quad x^2 + 3 = \frac{13}{2}x$

$\Rightarrow \quad 2x^2 + 6 = 13x$

$\Rightarrow \quad 2x^2 - 13x + 6 = 0$

$\Rightarrow \quad 2x^2 - 12x - x + 6 = 0$

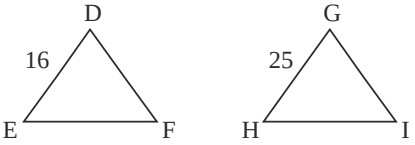
$\Rightarrow \quad 2x(x - 6) - 1(x - 6) = 0$

$\Rightarrow \quad (x - 6)(2x - 1) = 0$

$\Rightarrow \quad x = 6 \quad \text{or } x = 1/2$

Hence, the value of x is 6.

62. (c)



$\therefore \quad \frac{\text{Area of } \Delta DEF}{\text{Area of } \Delta GHI} = \frac{DE^2}{GH^2}$

$= \frac{(16)^2}{(25)^2} = \frac{256}{625}$

Hence, the ratio of ΔDEF and ΔGHI is 256 : 625.

63. (c) Sum of interior angles

$= (2n - 4) \times 90^\circ$

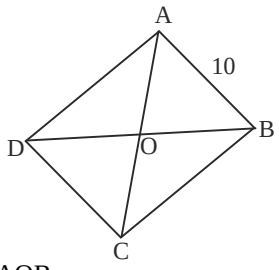
$= (2 \times 10 - 4) \times 90°$

$= (20 - 4) \times 90°$

$= 16 \times 90° = 1440°$

64. (d) Let the larger diagonal be d and smaller one be d/2

ABCD is a rhombus in which AC and BD intersect each other at O.



In ΔAOB,

$AO^2 + OB^2 = (10)^2$

$\Rightarrow \quad \left(\frac{d}{2 \times 2}\right)^2 + \left(\frac{d}{2}\right)^2 = 100$

$\Rightarrow \quad \frac{d^2}{16} + \frac{d^2}{4} = 100$

$\Rightarrow \quad d^2\left(\frac{4 + 1}{16}\right) = 100$

$\Rightarrow \quad d^2 = \frac{16 \times 100}{5}$

$\Rightarrow \quad d^2 = 16 \times 20$

$\Rightarrow \quad d^2 = 320$

Area of rhombus

$= \frac{1}{2}d_1 d_2 = \frac{1}{2} \times d \times \frac{d}{2}$

$= \frac{1}{4}.d^2 = \frac{1}{4} \times 320 = 80\ cm^2$

65. (c) Curved surface area $= 2\pi r^2$

$110.88 = 2\pi r^2 \quad \text{.....(i)}$

Volume $= \frac{2}{3}\pi r^3$

$155.232 = \frac{2}{3}\pi r^3 \quad \text{.....(ii)}$

Dividing equation (ii) by (i)

$\frac{155.232}{110.880} = \frac{\frac{2}{3}\pi r^3}{2\pi r^2} = \frac{1}{3}.r$

$\Rightarrow \quad \frac{155232}{110880} = \frac{1}{3}r$

$\Rightarrow \quad \frac{7}{5} = \frac{1}{3}r$

$\Rightarrow \quad r = \frac{21}{5} = 4.2\ cm$

66. (c) $x = 2\sec^2 A = \frac{2}{\cos^2 A}$

$= \frac{2}{1 - \sin^2 A}$

$= \frac{1 - \sin A + 1 + \sin A}{(1 - \sin A)(1 + \sin A)}$

$= \frac{1}{1 + \sin A} + \frac{1}{1 - \sin A}$

67. (d) Rate of interest

= 20% per half year

Equivalent rate for 1 year

$= \left(20 + 20 + \frac{20 \times 20}{100}\right)\% = 44\%$

$\therefore \quad \text{C. I.} = \frac{20000 \times 44}{100} = ₹\ 8800$

68. (d) Speed of first train 150 metre long = 40 kmph

Speed of second train = x kmph

Total length of both trains

$= (100 + 150)$ metre

$= 250\ \text{metre} = \frac{1}{4}\ \text{km.}$

According to the question,

$\frac{\text{Total length of trains}}{\text{Relative speed}} = \text{Time}$

$\Rightarrow \quad \frac{\frac{1}{4}}{x + 40} = \frac{9}{3600} = \frac{1}{400}$

$\Rightarrow \quad 4(x + 40) = 400$

$\Rightarrow \quad x + 40 = 100$

$\Rightarrow \quad x = 100 - 40 = 60\ \text{kmph.}$

69. (a) The population of city 2 years ago

$= \frac{P}{\left(1 + \frac{R}{100}\right)^2}$

$= \frac{26010}{\left(1 + \frac{2}{100}\right)^2} = \frac{26010}{\left(1 + \frac{1}{50}\right)^2}$

$= \frac{26010}{\left(\frac{51}{50}\right)^2} = \frac{26010 \times 50 \times 50}{51 \times 51}$

$= 25000$

70. (a) Marked price of table = ₹ x and its cost price = ₹ 100

According to the question,

$x \times \frac{80}{100} = 160$

$\Rightarrow \quad x = \frac{160 \times 100}{80} = ₹\ 200$

$\therefore$ After a discount of 40%,

S.P. of table $= ₹ \left(\frac{200 \times 60}{100}\right)$

$= ₹\ 120$

$\therefore$ Required profit percent = 20%

71. (c) Larger diagonal of rhombus

$= d_1 = 10$ units

$\therefore$ Smaller diagonal $= d_2 = 7$ units

$\therefore$ Required ratio $= \frac{\frac{1}{2} d_1 d_2}{d_1^2}$

$= \frac{1}{2} \cdot \frac{d_2}{d_1} = \frac{1}{2} \times \frac{7}{10} = 7 : 20$

72. (b) Time taken by A = x days

$\therefore$ Time taken by B = 1.5x days

According to the question,

$1.5x - x = 8$

$\Rightarrow \quad 0.5\ x = 8$

$\Rightarrow \quad x = \frac{8}{0.5} = \frac{80}{5} = 16$

$\therefore$ Time taken by B

$= 16 \times 1.5 = 24$ days

Work done by A and B in the first two days $= \frac{1}{16} + \frac{1}{24}$

$= \frac{3+2}{48} = \frac{5}{48}$

Work done by them in first 18 days

$= \frac{9 \times 5}{48} = \frac{45}{48} = \frac{15}{16}$

Remaining work

$= 1 - \frac{15}{16} = \frac{1}{16}$

Now, time taken by A in doing $\frac{1}{16}$ work = 1 day

$\therefore$ Required time = 19 days.

73. (d) Required difference

= (24 – 6)% of 200 crores

$= \left(\frac{200 \times 18}{100}\right)$ crores

= 36 crores

74. (b) Population of country 5

$= \left(\frac{200 \times 7}{100}\right)$ crores

$\therefore$ Total GDP = \$ (14 × 2260) crores

= \$ 31640 crores

75. (d) Country with the third lowest per capita income

= Country 4

$= \left(\frac{200 \times 17}{100}\right)$ crores

= 34 crores

$\therefore$ Total GDP

= \$ (34 × 4840) crores

= \$ 164560 crores

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