

General Knowledge Sample Paper - 5

SECTION-III : GENERAL TEST

1. Panch Mahal is situated in :
(a) Hawa Mahal
(b) Gwalior Fort
(c) Fatehpur Sikri
(d) Agra Fort
2. Kedarnath Singh won Jnanpith Award for work in which language?
(a) Gujarati (b) Marathi
(c) Hindi (d) Telugu
3. The name of first mammal clone sheep is
(a) Noori (b) Dolly
(c) Louise (d) Durga
4. What is dehydration?
(a) Removal of acid from a molecule
(b) Removal of base from a molecule
(c) Removal of water from a molecule
(d) Removal of alkali from a molecule
5. _____ allows searching for information and computing derived information.
(a) Data definition language
(b) Data manipulation language
(c) Query language
(d) OQL
6. Garadi is a folk dance of _____.
(a) Mizoram (b) Puducherry
(c) Gujarat (d) Rajasthan
7. If price of an article decreases from ₹ 80 to ₹ 60, quantity demanded increases from 600 units to 750 units. Find point elasticity of demand.
(a) - 1 (b) 1
(c) -1.25 (d) 1.25
8. Which of the following measures will not increase a nation's wealth?
(a) investing in new companies
(b) increasing efficiency of factories
(c) converting grasslands into orchards
(d) By redistributing taxes as subsidies
9. Squadron Leader is one of the ranks of the Indian
(a) Army
(b) Navy
(c) Air Force
(d) Paramilitary Force
10. Which is called country of canals?
(a) India (b) Pakistan
(c) Japan (d) Myanmar
11. Mahabalipuram was founded by _____.
(a) Rajaraja Chola
(b) Narasimha Varman
(c) Chandragupta Maurya
(d) Vivasvan
12. Who invented airbag?
(a) Wright brothers
(b) Reynold B. Johnson
(c) Assen Jordanoff
(d) Ken Kutaragi
13. Article 39A of the Indian Constitution "Equal justice and free legal aid" deals with :
(a) the State Government
(b) the directive principles of state policy
(c) the Union Government
(d) the fundamental rights of the Indian Citizen
14. Who among the following has scored 2 triple hundreds in Test matches?
(a) Ricky Ponting
(b) Jacques Kallis
(c) Sachin Tendulkar
(d) Brian Lara
15. Who is the author of "Swami and Friends"?
(a) Sudeep Nagarkar
(b) Devdutt Pattanaik
(c) R. K. Narayan
(d) Aravind Adiga
16. Which disease is caused due to deficiency of Iodine?
(a) Rickets
(b) Scurvy
(c) Goitre
(d) Growth retardation
17. The modern periodic table consists of 18 groups and 7 periods. What is the atomic number of the element placed in the 3rd group and the 4th period?
(a) 23 (b) 21
(c) 19 (d) 11
18. Which of the following is a green house gas or a gas which can deplete the ozone layer?
(a) CH_2ClF (b) C_2H_2
(c) PF_5 (d) COCl_2
19. First Indian to swim across the English Channel was
(a) Apsara
(b) Durga Agarwal
(c) Mihir Sen
(d) Arati Saha
20. Which state does not share its border with Jharkhand?
(a) Madhya Pradesh
(b) Chhattisgarh
(c) Odisha
(d) West Bengal
21. Who discovered X-Ray?
(a) Wilhelm Roentgen
(b) William Lee
(c) X Rollswick
(d) I Thompson
22. What is the unit of the physical quantity Entropy?
(a) watt per Kelvin
(b) newton per Kelvin
(c) pascal per Kelvin
(d) joule per Kelvin
23. Which Article specifies the Fundamental Duties of every citizen?
(a) Article 80 (b) Article 343
(c) Article 51A (d) Article 356
24. Michael Schumacher is associated with which sport?
(a) Football
(b) Golf
(c) Formula One racing
(d) Swimming

25. Who will take charge as the next Chief Justice of India on 3rd October 2018?

- (a) Manishankar Iyer
(b) Ranjan Sanghvi
(c) Justice Ranjan Gogoi
(d) Suresh Mahajan

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

26. Tropic of Cancer : Latitude :
Prime Meridian : ?

- (a) Equinox
(b) Contour line
(c) Longitude
(d) Climatic zone

27. ECEIN : NIECE :: VANISH : ?

- (a) HSINVA (b) SHINAV
(c) HSINAV (d) HSNIIV

28. HNP : JPR :: QRS : ?

- (a) KNO (b) STU
(c) NQR (d) TZA

29. 14 : 225 :: 17 : ?

- (a) 225 (b) 324
(c) 342 (d) 569

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

30. (a) Bridge (b) Escalator
(c) Ladder (d) Staircase

31. (a) VTR (b) JLO
(c) PNL (d) HFD

32. (a) 1256 (b) 5397
(c) 8765 (d) 9842

33. (a) 1728 (b) 5789
(c) 6088 (d) 4321

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. LMN, NPP, PSR, ?

- (a) QRS (b) RQT
(c) PQR (d) RVT

35. FD, HF, KH, OJ, ?

- (a) GH (b) EF
(c) RS (d) TL

36. 1, 6, 21, 66, ?

- (a) 250 (b) 201
(c) 310 (d) 308

37. In the following question, two statements are given 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.

Statement:

(I) Demonetization has evolved need for leaning electronic payment system (EPS).

(II) EPS will enable people to go cashless and use plastic money for most of their transactions.

Conclusions:

(I) EPS is quick, safe, and easy way of transaction of money from one account to another.

(II) Cashless transactions will further curb the black marketing of money in upcoming time.

- (a) Only conclusion II follows
(b) Conclusion I and II both follow
(c) Neither I nor II follows
(d) Only conclusion I follows

38. If day before yesterday was Sunday, then which day of the week will the sixth day from today be?

- (a) Wednesday (b) Tuesday
(c) Monday (d) Thursday

39. Arrange the given words in the sequence in which they occur in the dictionary.

- i. Regulate ii. Remedy
iii. Reassemble iv. Research
(a) iii, i, ii, iv (b) i, ii, iii, iv
(c) iv, ii, i, iii (d) i, iii, iv, ii

40. In a certain code language, AUSTRALIA is written as @\$!#^@*?@. How is "STRAIT" written in that code language?

- (a) !#^@?# (b) !#^@?#
(c) !#^?@# (d) !#^@#

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

P	M	Q
F	C	F
J	J	?

- (a) R (b) K
(c) L (d) O

42. If "+" means "subtraction", "×" means "division", "÷" means "addition" and "-" means "multiplication", then

$$15 \times 11 + 78 - 5 \div 45 = ?$$

- (a) - 331 (b) - 460
(c) - 475 (d) - 743

43. In the following question, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?

CDEF_EDC_DE_FED_

- (a) FCFC (b) FCCD
(c) DCCC (d) DEFC

44. A boy leaves his home. He walks 45 m in south-west direction and then 145 m in north-east direction. Then, he moves 60 m in south direction. How far is he now from his initial position?

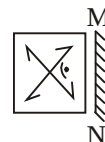
- (a) 100 m (b) 80 m
(c) 40 m (d) 60 m

45. Introducing a boy, a girl says, "He is the son of the only sister of my mother's brother". How is the boy related to that girl?

- (a) Father-in-law
(b) Brother
(c) Cousin
(d) Niece

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

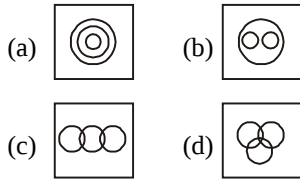
Questions figure:



Answer figures:

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

47. Identify the diagram that best represents the relationship among the given classes.
Society, Friends, Enemies

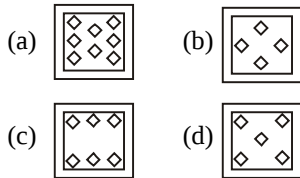


48. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

Question figures:

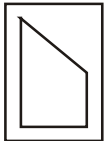


Answer figures:

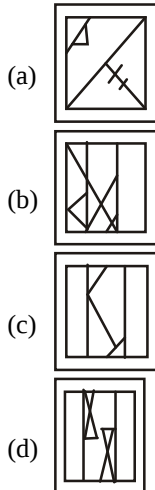


49. From the given answer figures select the one in which the question figure is hidden/embedded.

Question Figure:



Answer Figures:



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, 'N' can be represented by 21, 43 etc. and 'R' can be represented by 66, 57 etc. Similarly, you have to identify the set for the word 'GEAR'.

Matrix-I

	0	1	2	3	4
0	A	S	E	G	A
1	Q	D	H	L	S
2	W	N	T	K	D
3	H	D	Y	A	F
4	R	G	A	N	G

Matrix-II

	5	6	7	8	9
5	E	T	R	R	F
6	G	R	P	L	R
7	I	O	U	R	M
8	D	F	R	K	Q
9	S	R	W	D	E

- (a) 03, 99, 57, 77
(b) 44, 55, 42, 66
(c) 41, 00, 02, 78
(d) 65, 02, 00, 43
51. The two numbers are 63 and 77, HCF is 7. Find the LCM.
(a) 668 (b) 693
(c) 674 (d) 680
52. The total cost of a washing machine with an electric chimney was ₹ 57,750. The electric chimney was sold at a profit of 34% and the washing machine at a loss of 24%. If the sale price was the same in both the items, then the cost price of the cheaper item was
(a) ₹ 26,850 (b) ₹ 20,900
(c) ₹ 28,875 (d) ₹ 25,850
53. If $(7 - 12x) - (3x - 7) = 14$, then the value of x is
(a) -4 (b) 0
(c) 5 (d) 2
54. Two students appeared for an examination. One of them secured 10 marks more than the other and his marks were 75% of the sum of their marks. The marks obtained by them are:
(a) 52 and 42 (b) 68 and 58
(c) 63 and 53 (d) 15 and 5
55. By increasing the price of entry ticket to a fair in the ratio 3 : 7, the number of visitors to the fair has decreased in the ratio 16 : 13. In what ratio has the total collection increased or decreased?
(a) decreased in the ratio 91 : 48
(b) increased in the ratio 48 : 91
(c) increased in the ratio 39 : 112
(d) decreased in the ratio 112 : 39
56. To cover a distance of 315 km in 2.8 hours what should be the average speed of the car in metres/second?
(a) 112.5 m/s (b) 56.25 m/s
(c) 62.5 m/s (d) 31.25 m/s
57. Praful has done $\frac{1}{2}$ of a job in 30 days, Sarabjit completes the rest of the job in 10 days. In how many days can they together do the job ?
(a) 30 days (b) 45 days
(c) 15 days (d) 60 days
58. Ticket for an adult is ₹ 500 and a child is ₹ 200. 1 child goes free with two adults. If a group has 20 adults and 8 children what will be the discount percent the group get?
(a) 53.43 percent
(b) 13.79 percent
(c) 32.2 percent
(d) 35.06 percent
59. A factory buys 8 machines. 3 Machine A, 2 Machine B and rest Machine C. Prices of the machines are ₹ 1,00,000, ₹ 80,000 and ₹ 45,000 respectively. Calculate the average cost of these machines?
(a) 74,375 (b) 75,000
(c) 85,625 (d) 72,875
60. In $\triangle ABC$, the angle bisector of $\angle A$ cuts BC at E. Find length of AC, if lengths of AB, BE and EC are 9 cm, 3.6 cm and 2.4 cm.
(a) 5.4 cm (b) 8 cm
(c) 4.8 cm (d) 6 cm

61. The effective annual rate of interest corresponding to a nominal rate of 22% per annum payable half-yearly is :
 (a) 44 percent
 (b) 23.21 percent
 (c) 46.42 percent
 (d) 22 percent
62. In a triangle, the length of the opposite side of the angle which measures 45° is $8\sqrt{2}$ cm, what is the length of the side opposite to the angle which measures 90° ?
 (a) 16 cm (b) $4\sqrt{3}$ cm
 (c) $8\sqrt{3}$ cm (d) $6\sqrt{3}$ cm
63. If the volume of a cylinder is 2156 cubic cm and height is 14 cm, find its radius ?
 (a) 14 cm (b) 21 cm
 (c) 3.5 cm (d) 7 cm
64. $2 \cos [(C + D)/2] \cdot \cos [(C - D)/2]$ is equal to :
 (a) $\cos C - \cos D$
 (b) $\sin C + \sin D$
 (c) $\cos C + \cos D$
 (d) $\sin C - \sin D$
65. Two people A and B are at a distance of 260 km from each other at 9 : 00 a.m. A immediately starts moving towards B at a speed of 25 km/h and at 11 : 00 a.m. B starts moving towards A at a speed of 10 km/hr. At what time (in p.m.) will they meet each other?
 (a) 5 : 00 (b) 6 : 00
 (c) 6 : 30 (d) 7 : 00
66. If ₹ 2500 becomes to ₹ 2970.25 in 2 years at compound interest compounded annually, what is the yearly rate of interest (in %)?
 (a) 7 (b) 9
 (c) 11 (d) 13
67. If $A : B = 2 : 5$, $B : C = 4 : 3$ and $C : D = 2 : 1$, what is the value of $A : C : D$?
 (a) 6 : 5 : 2 (b) 7 : 20 : 10
 (c) 8 : 30 : 15 (d) 16 : 30 : 15
68. The average runs conceded by a bowler in 5 matches is 45 and 15.75 in other 4 matches. What is the average runs conceded by the bowler in 9 matches?
 (a) 15 (b) 32
 (c) 35 (d) 53.5

69. A person bought pens at 25 for a rupee and sold at 15 for a rupee. What is his profit per cent?

- (a) $16\frac{2}{3}\%$ (b) $33\frac{1}{3}\%$
 (c) $66\frac{2}{3}\%$ (d) 40%

70. 80 litre mixture of milk and water contains 10% milk. How much milk (in litres) must be added to make water percentage in the mixture as 80%?

- (a) 8 (b) 9
 (c) 10 (d) 12

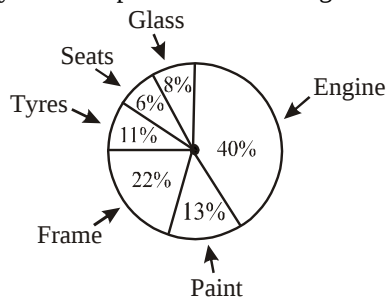
71. A bus starts running with the initial speed of 21 km/hr and its speed increases every hour by 3 km/hr. How many hours will it take to cover a distance of 252 km?

- (a) 3 (b) 5
 (c) 8 (d) 10

72. A sum of ₹ 400 becomes ₹ 448 at simple interest in 2 years. In how many years will the sum of ₹ 550 amounts to ₹ 682 at the same rate?

- (a) 2 (b) 3
 (c) 3.5 (d) 4

- Directions (Q.73-75): The pie chart given below shows the percentage of time taken by different processes in making a car.



73. If total time taken to make a car is 300 hours, what is the total time (in hours) taken in paint and frame?

- (a) 99 (b) 72
 (c) 105 (d) 66

74. If time taken in seats is 192 hours, what is the time taken (in hours) in glass?

- (a) 256 (b) 352
 (c) 416 (d) 278

75. If total time taken in engine and tyres is 127.5 hours, what is the difference (in hours) in time taken by frame and glass respectively?

- (a) 27.5 (b) 12.5
 (c) 40 (d) 35

SECTION-III : GENERAL TEST

1. (c) Panch Mahal is a five storey palace in Fatehpur Sikri, Uttar Pradesh. Renowned for its exceptional architecture, it stands close to the Zenana quarters (Harem) which supports the supposition that it was used for entertainment and relaxation. Built by Akbar, the architecture of Panch Mahal was inspired by that of a Buddhist temple.

2. (c) Noted Hindi poet, Kedarnath Singh was, in June 2014, chosen for the Jnanpith award for 2013. He is the 10th Hindi writer to receive the honour and is the 49th recipient of Jnanpith award. Abhi Bilkul Abhi and Yahan Se Dekho are among his prominent works.

3. (b) Dolly was the world's first cloned sheep. It was born on 5 July, 1996. It was a female domestic sheep, and the first mammal cloned from an adult somatic cell, using the process of nuclear transfer. Dolly was cloned by Ian Wilmut, Keith Campbell and colleagues at the Roslin Institute, part of the University of Edinburgh, Scotland.

4. (c) In physiology, dehydration is a deficit of total body water, with an accompanying disruption of metabolic processes. Dehydration occurs when free water loss exceeds free water intake, usually due to exercise or disease. Dehydration can cause hypernatremia (high levels of sodium ions in the blood).

5. (c) Query language allows searching for information and computing derived information. Query languages can be classified according to whether they are database query languages or information retrieval query languages. The difference is that a database query language attempts to give factual answers to factual questions, while an information retrieval query language attempts to find documents containing information that is relevant to an area of inquiry.

6. (b) Garadi is a folk dance performed in Puducherry. It is performed during all festivals of the region. This dance performance is usually performed for five to eight hours at a stretch, for several

nights in a row. The origin of Garadi dance is related to the Hindu epic, Ramayana.

7. (a) Point Elasticity of Demand (PED) = % change in quantity / % change in price. If Q_1 and Q_2 are the initial and final quantities and P_1 and P_2 are the initial and final prices.

$$PED = \frac{\frac{(Q_2 - Q_1)}{Q_1} \times 100}{\frac{(P_2 - P_1)}{P_1} \times 100}$$

As per the question, $P_1 = ₹ 80$, $P_2 = ₹ 60$; $Q_1 = 600$ units, $Q_2 = 750$ units. Putting these values in the formula, we get $PED = -1$

8. (d) Redistribution of income and redistribution of wealth are respectively the transfer of income and of wealth from some individuals to others by means of taxation, charity, welfare, public services, land reform, etc. Redistribution of taxes and subsidies are redistribution of wealth. They do not lead to wealth creation of a nation that is in fact the stream of goods and services that it creates and capital accumulation.

9. (c) Squadron leader is a commissioned rank in Air Force. An Air Force squadron leader ranks above flight lieutenant and immediately below wing commander and it is the most junior of the senior officer ranks. The rank of squadron leader is used in the air forces of countries which have historical British influence.

10. (b) Pakistan is known as country of Canals due to its extensive network of canals from Indus and its tributaries. Most of Pakistan's canals are in Punjab province that are result of India's partition which saw most of the canals going to the former. During India's partition, Punjab was divided into West Punjab which came to be part of Pakistan and East Punjab which remained with India. East Punjab in India was relatively under-developed in irrigation works, while West Punjab in Pakistan included most of the canal systems of the pre-partition Indus basin.

11. (b) Mahabalipuram, also known as Mamallapuram, was founded by 7th-century CE Pallava king, Narasimhavarmam, also called Mamalla ("great wrestler"), for whom

the town was named. At present, it is a town in Kancheepuram district of Tamil Nadu. It is famous for the Shore Temple, with thousands of sculptures to the glory of Shiva.

12. (c) The world's first air bag, meant to ensure the safety of pilots and automobile drivers alike, was designed by Assen Jordanoff in 1957. A Bulgarian engineer, and aviator, Jordanoff is considered to be the founder of aeronautical engineering in Bulgaria, as well as a contributor to the development of aviation in the United States.

13. (b) Article 39A is a Directive Principle of State Policy under Part IV of Indian Constitution. It deals with equal justice and free legal aid. It states that the state shall secure that the operation of the legal system promotes justice, on a basis of equal opportunity, and provide free legal aid, by suitable legislation or schemes or in any other way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.

14. (d) Brian Lara and Chris Gayle of the West Indies, Donald Bradman of Australia and Virender Sehwag of India are the only batsmen to reach 300 more than once. Lara hit his first triple hundred (375) against England in 1994 and the second one (400) against England in 2004. His 400 not out against England is the highest score in Test cricket.

15. (c) Swami and Friends is the first of a trilogy of novels written by R. K. Narayan. First published in 1935, the novel is set in British India in a fictional town called Malgudi. The second and third books in the trilogy are The Bachelor of Arts and The English Teacher.

16. (c) A goitre is a swelling of the neck or larynx resulting from enlargement of the thyroid gland associated with a thyroid gland that is not functioning properly. Worldwide, over 90% cases of goitre are caused by iodine deficiency, usually seen in countries that do not use iodized salt. Selenium deficiency is also considered a contributing factor.

17. (b) Scandium is placed in the 3rd group and the 4th period. Its atomic number is 21. Scandium is the first element in the third column of the periodic table. It is classified as a

transition metal or rare earth metal. Scandium atoms have 21 electrons and 21 protons with 2 valence electrons in the outermost shell.

18. (a) Chlorofluoromethane (CH_2ClF) or Freon 31 is a gaseous mixed halomethane and a hydrochloro-fluorocarbon (HCFC). It is used as a refrigerant and has an ozone depletion potential of 0.02. It harms public health and the environment by destroying ozone in the upper atmosphere.

19. (c) Mihir Sen was the first Indian swimmer to conquer the English Channel from Dover to Calais in 1958. He also earned the distinction of swimming the Oceans of the five continents in one calendar year (1966): Palk Strait, Dardanelles, Bosphorus, the straits of Gibraltar and the entire length of the Panama Canal.

20. (a) Jharkhand shares its border with the states of Bihar to the north, Uttar Pradesh and Chhattisgarh to the west, Odisha to the south, and West Bengal to the east. Most of the states lies on the Chota Nagpur Plateau.

21. (a) X-rays were discovered by Wilhelm Conrad Roentgen, a Professor at Wuerzburg University in Germany, on 8 November 1895. He made the discovery while working with a cathode-ray tube in his laboratory. Roentgen observed a fluorescent glow of crystals on a table near his tube that was capable of passing through most substances.

22. (d) In statistical mechanics, entropy (S) is related to the number of microscopic configurations O that a thermodynamic system can have when in a state as specified by some macroscopic variables. The SI unit of Entropy (S) is Joules per Kelvin (J/K). A more positive value of entropy means a reaction is more likely to happen spontaneously.

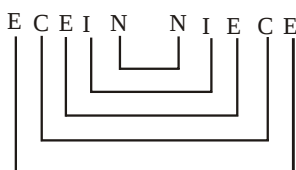
23. (c) The Fundamental Duties are contained in Article 51A under Part IVA of the constitution. The Fundamental Duties of citizens were added to the Constitution by the Amendment in 1976. Originally ten in number, the Fundamental Duties were increased to eleven by the 86th Amendment in 2002.

24. (c) Michael Schumacher is a German retired racing driver. He is a seven-time Formula One World Champion and is widely regarded as one of the greatest Formula One drivers of all time. Schumacher holds many of Formula One's driver records, including most championships, race victories, fastest laps, pole positions and races won in a single season - 13 in 2004.

25. (c) Justice Ranjan Gogoi will take charge as the next Chief Justice of India on 3rd October 2018. Current Chief Justice of India Deepak Misra will retire on 2nd October 2018. As per convention, the senior-most judge is eligible to be the Chief Justice of India. Ranjan Gogoi is expected to retire on November 17 as the Supreme Court judge. He has served as a judge in Gauhati High Court and Chief Justice of Punjab and Haryana High Court.

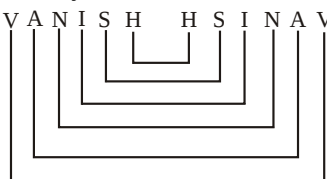
26. (c) As, Tropic of cancer is related to Latitude. Similarly Prime Meridian is related to Longitude.

27. (c) As,



Opposite Letters

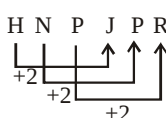
Similarly



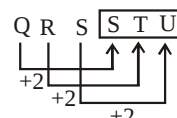
Opposite Letters

28. (b)

As,



Similarly,



Finally the missing term is STU.

29. (b)

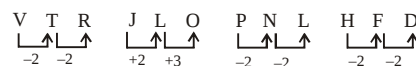
$$14 \rightarrow (14 + 1) \rightarrow 15 \rightarrow (15)^2 \rightarrow 225$$

$$17 \rightarrow (17 + 1) \rightarrow 18 \rightarrow (18)^2 \rightarrow \boxed{324}$$

Finally the missing number is 324.

30. (a) Escalator, ladder and staircase are kinds of different ladders. But 'Bridge' is odd.

31. (b)



Finally, the odd word pair is JLO.

$$32. (d) 1256 = 1 + 2 + 5 + 6 = 14$$

$$5397 = (5 + 3 + 9 + 7) = 24$$

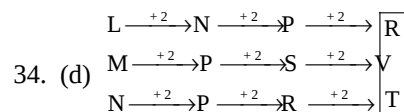
$$8765 = (8 + 7 + 6 + 5) = 26$$

$$9842 = (9 + 8 + 4 + 2) = \boxed{23}$$

Finally, the odd number is 9842.

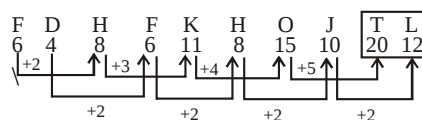
33. (a) 1728 is a cubic number and all remaining numbers (5789, 6088, and 4321) are not a cubic numbers.

So, 1728 is odd number.



Finally the missing word is R VT.

35. (d)



Finally, the missing term is TL.

$$36. (b) 1 \rightarrow 6 \rightarrow 21 \rightarrow 66 \rightarrow 201$$

$$1 \times 3 + 3 = 6$$

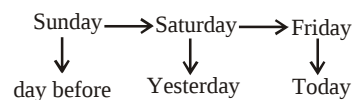
$$6 \times 3 + 3 = 21$$

$$21 \times 3 + 3 = 66$$

$$66 \times 3 + 3 = 201$$

37. (c) According to statements, neither conclusion I nor Conclusion II follows.

38. (c)



So Sixth day from today = Monday.

39. (a) According to dictionary, the arrangement of the words are :

(iii) Reassemble, (i) Regulate, (ii) Remedy, (iv) Research.

40. (a) As,

A U S T R A L I A
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
@ \$! # ^ @ * ? @

Similarly, S T R A I T
↓ ↓ ↓ ↓ ↓ ↓
! # ^ @ ? #

Finally, 'STRAIT' can be written in that code language as !#^@?#.

41. (b) $P - F = J$

$$16 - 6 = 10$$

$$M - C = J$$

$$13 - 3 = 10$$

Similarly, $Q - F = K$

$$17 - 6 = 11$$

Finally, the missing number is $K = 11$.

42. (a) Given Expression = $154 \times 11 + 78 - 5 \div 45$

$$= 154 \div 11 - 78 \times 5 + 45$$

$$= 14 - 78 \times 5 + 45$$

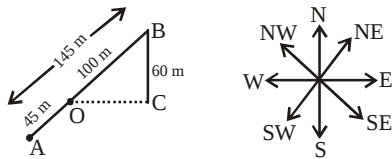
$$= 14 - 390 + 45$$

$$= -390 + 59 = -331$$

43. (a) The Series is :

CDEF FEDC CDEF FEDC

44. (b)



$$OB = (AB - OA)$$

$$= (145 - 45) = 100 \text{ m}$$

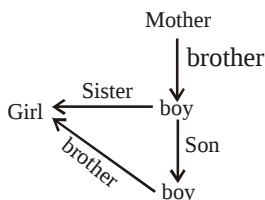
In $\triangle OBC$,

$$OC^2 = OB^2 - BC^2$$

$$OC = \sqrt{(100)^2 - (60)^2}$$

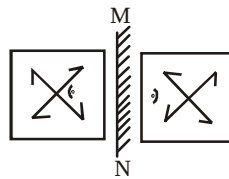
$$= \sqrt{6400} = 80 \text{ m}$$

45. (b)

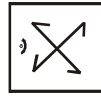


Finally, the boy is brother of that Girl.

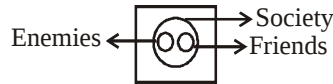
46. (c)



Finally, the right mirror image of the given figure is



47. (b) Friends and Enemies both are living in society.



48. (b) A piece of paper is folded and punched.

when opened it will appear as given below—



49. (b)

50. (b) $G = 03, 41, \textcircled{44}, 65$

$E = 02, \textcircled{55}, 99$

$A = 00, 04, 33, \textcircled{42}$

$R = 40, 57, 58\textcircled{66}, 69, 78, 87, 96$

For 'GEAR' the set of numbers are 44, 55, 42, 66.

51. (b) $H.C.F. \times L.C.M. =$

First Number $\times$ Second Number

$$7 \times L.C.M. = 63 \times 77$$

$$L.C.M. = \frac{63 \times 77}{7} = 9 \times 77$$

$$= 693.$$

52. (b) Let the cost of washing machine be x and the cost of chimney

$$= (57750 - x)$$

According to question,

$$\Rightarrow \frac{(100-24)}{100} x$$

$$= (57750 - x) \times \frac{134}{100}$$

$$\Rightarrow \frac{76}{100} x = (57750 - x) \times \frac{134}{100}$$

$$\Rightarrow 76x = 57750 \times 134 - 134x$$

$$\Rightarrow 134x + 76x = 57750 \times 134$$

$$\Rightarrow 210x = 57750 \times 134$$

$$\therefore x = \frac{57750 \times 134}{210} = 36850$$

Cost of washing machine = ₹ 36850

Cost of chimney = ₹ 57750 - 36850 = ₹ 20900

The chimney is cheaper by ₹ 20900.

53. (b) $(7 - 12x) - (3x - 7) = 14$

$$\Rightarrow 7 - 12x - 3x + 7 = 14$$

$$\Rightarrow -15x = 14 - 14$$

$$\Rightarrow x = \frac{0}{-15} = 0$$

54. (d) Let first student get x marks and second $(x + 10)$ marks

$$\Rightarrow x$$

$$= \frac{75}{100} (x + x + 10)$$

$$\Rightarrow 10 + x = \frac{3}{4} (2x + 10)$$

$$\Rightarrow 40 + 4x = 6x + 30$$

$$\Rightarrow 10 = 2x \Rightarrow x = 5$$

Their marks were 5 and 15.

$$55. (d) \text{ Required ratio} = \frac{\frac{16}{3}}{\frac{3}{7}}$$

$$= \frac{16 \times 7}{13 \times 3} = \frac{112}{39}$$

$$= 112 : 39$$

56. (d) Speed of car = $\frac{\text{Distance}}{\text{Time}}$

$$= \frac{315 \text{ km}}{2.8 \text{ hr.}} = \frac{3150}{28} = \frac{3150 \times 1000 \text{ m}}{28 \times 3600 \text{ sec}}$$

$$= \frac{450 \times 5}{4 \times 18} = 31.25 \text{ m/s}$$

57. (c) Full job done by Praful in 60 days

$$\text{Left job} = \left(1 - \frac{1}{2}\right) = \frac{1}{2}$$

$\frac{1}{2}$ job is completed by Sarabjit = 10

days

Full job is completed by Sarabjit

$$= 10 \times 2 = 20 \text{ days}$$

Both's 1 day's job =

$$\frac{1}{60} + \frac{1}{20} = \frac{1+3}{6}$$

$$= \frac{4}{60} = \frac{1}{15}$$

Time taken by both

$$= \frac{1}{\frac{1}{15}} \text{ days} = 15 \text{ days}$$

58. (b) cost of tickets of 20 adults and 8 children with discount

$$\begin{aligned} &= 16 \text{ adults} + 8 \text{ children} + 4 \text{ adults} \\ &= 8 (2 \text{ adults} + 1 \text{ child}) + 4 \text{ adults} \\ &= 8 \times (2 \times 500) + 4 \times 500 \\ &= 8000 + 2000 \\ &= 10000 \end{aligned}$$

Without discount cost of tickets

$$\begin{aligned} &= 20 \text{ adults} + 8 \text{ children} \\ &= 20 \times 500 + 8 \times 200 \\ &= 10000 + 1600 = 11600 \end{aligned}$$

$$\text{Discount} = 11600 - 10000 = 1600$$

$$\text{Discount \%} = \frac{1600 \times 100}{11600}$$

$$= \frac{1600}{116} = 13.79\%$$

59. (a) Average cost of Machines

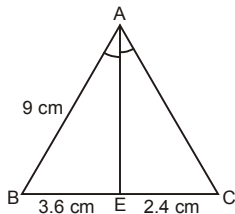
$$= \frac{3 \times 100000 + 2 \times 80000 + 3 \times 45000}{8}$$

$$= \frac{300000 + 160000 + 135000}{8}$$

$$= \frac{595000}{8} = 74375$$

Average cost of each Machine is ₹ 74375.

60. (d) In $\triangle ABE$ and $\triangle ACE$



$$\frac{AB}{BE} = \frac{AC}{EC}$$

$$\frac{9}{3.6} = \frac{AC}{2.4}$$

$$AC = \frac{9 \times 2.4}{3.6} = \frac{9 \times 24}{36} = 6 \text{ cm}$$

$$61. (d) \text{ C.I.} = P \left[\left(1 + \frac{11}{100} \right)^2 - 1 \right]$$

$$= P \left[\left(\frac{111}{100} \right)^2 - 1 \right]$$

$$= P \left[\frac{12321 - 10000}{10000} \right]$$

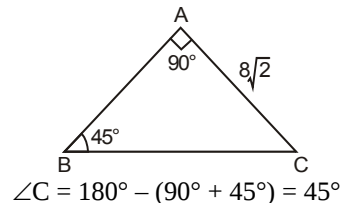
$$= P \left[\frac{2321}{10000} \right] = 0.2321P$$

Effective percent

$$= \frac{0.2321P \times 100}{P}$$

$$= 23.21\%$$

62. (a)



Hence, Opposite side of $\angle C$ is also

$$AB = AC = 8\sqrt{2}$$

$$\begin{aligned} BC &= \sqrt{AB^2 + AC^2} \\ &= \sqrt{(8\sqrt{2})^2 + (8\sqrt{2})^2} \\ &= \sqrt{128 + 128} \\ &= \sqrt{256} = 16. \end{aligned}$$

The length of BC is 16 cm.

63. (d) Volume of a cylinder $\pi r^2 h$

$$2156 = \frac{22}{7} \times (r^2) \times 14$$

$$r^2 = \frac{2156 \times 7}{22 \times 14} = 49$$

$$\begin{aligned} r &= \sqrt{49} \\ r &= 7 \text{ cm} \end{aligned}$$

Hence, the required radius is 7 cm.

$$\begin{aligned} 64. (c) \quad 2 \cos \left[\frac{C+D}{2} \right] \cos \left[\frac{C-D}{2} \right] \\ &= \cos C + \cos D [\cos A + \cos B] \\ &= \cos \frac{A+B}{2} \cos \frac{A-B}{2} \end{aligned}$$



Let A and B meet each other t hours after 9 a.m.

Distance = AB = 260 km

$$\therefore 25 \times t + 10 (-2) = 260$$

$$\Rightarrow 25t + 10t - 20 = 260$$

$$\Rightarrow 35t = 260 + 20 = 280$$

$$\Rightarrow t = \frac{280}{35} = 8 \text{ hours}$$

$\therefore$ Required time = 5 p.m.

$$66. (b) A = P \left(1 + \frac{R}{100} \right)^h$$

$$\Rightarrow 2970.25 = 2500 \left(1 + \frac{R}{100} \right)^2$$

$$\Rightarrow \frac{297025}{250000} = \left(1 + \frac{R}{100} \right)^2$$

$$\Rightarrow \frac{545}{500} = \left(1 + \frac{R}{100} \right)$$

$$\Rightarrow \frac{109}{100} = 1 + \frac{R}{100}$$

$$\Rightarrow \frac{R}{100} = \frac{109}{100} - 1 = \frac{9}{100}$$

$$\Rightarrow R = \frac{9}{100} \times 100 = 9\% \text{ per annum}$$

$$67. (a) \frac{A}{B} = \frac{2}{5} \text{ and } \frac{B}{C} = \frac{4}{3}$$

$$\therefore \frac{A}{B} \times \frac{B}{C} = \frac{2}{5} \times \frac{4}{3} \Rightarrow \frac{A}{C} = \frac{8}{15}$$

$$\therefore A : C = 8 : 15 = 16 : 30$$

$$C : D = 2 : 1 = 30 : 15$$

$$\therefore A : C : D = 16 : 30 : 15$$

68. (b) Required average of runs conceded

$$= \frac{5 \times 45 + 4 \times 15.75}{5 + 4}$$

$$= \frac{225 + 63}{9} = \frac{288}{9} = 32$$

$$69. (c) \text{ C.P. of 15 pens} = \left(\frac{100}{25} \times 15 \right)$$

paise = 60 Paise

Their S.P = 100 paise

$$\therefore \text{Profit percent} = \left(\frac{100 - 60}{60} \right) \times 100$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

70. (c) In 80 litres of mixture,
Quantity of milk added = x litres
according to the question,

$$\frac{8+x}{80+x} = \frac{20}{100} = \frac{1}{5}$$

$$\Rightarrow 5 + 40 = 80 + x$$

$$\Rightarrow 5 - x = 80 - 40$$

$$\Rightarrow x = 40$$

$$\Rightarrow x = \frac{40}{4} = 10 \text{ litres}$$

71. (c) It is an arithmetic series where

$$a = 21; d = 3; S = 252; n = ?$$

$$\therefore S = \frac{n}{2} [2a + (n-1)d]$$

$$\Rightarrow 252 = \frac{n}{2} [2 \times 21 + (n-1)3]$$

$$\Rightarrow 504 = n(42 + 3n - 3)$$

$$\Rightarrow 504 = n(3n + 39)$$

$$\Rightarrow 504 = 3n(n + 13)$$

$$\Rightarrow n(n + 13) = \frac{504}{3} = 168$$

$$\Rightarrow n(n + 13) = 8 \times 21$$

$$\Rightarrow n = 8 \text{ hours}$$

72. (d) In Case I, S.I. for two years

$$= ₹(448 - 400) = ₹48$$

$$\therefore \text{Rate} = \frac{\text{S.I.} \times 100}{P \times T} = \frac{48 \times 100}{400 \times 2}$$

$$= 6\% \text{ Per annum}$$

In Case II,

$$\text{Interest} = ₹(682 - 550) = ₹132$$

$$\therefore \text{Time} = \frac{132 \times 100}{550 \times 6} = 4 \text{ years}$$

73. (c) Corresponding percent for paint and frame

$$= (22 + 13)\% = 35\%$$

$$\therefore 100\% = 300 \text{ hours}$$

$$\therefore 35\% = \frac{300}{100} \times 35 = 105 \text{ hours}$$

$$74. (a) \therefore 6\% = 192 \text{ hours}$$

$$\therefore 8\% = \frac{192}{6} \times 8 = 256 \text{ hours}$$

75. (d) Percentage difference for time taken for frame and glass

$$= (22 - 8)\% = 14\%$$

$$\therefore (40 + 11)\% = 127.5 \text{ hours}$$

$$\therefore 51\% = 127.5 \text{ hours}$$

$$\therefore 14\% = \frac{127.5}{51} \times 14 = 35 \text{ hours}$$