General Knowledge Sample Paper - 7

SECTION-III : GENERAL TEST

1. The most suitable soil for the production of cotton is:
   (a) Black lava soil
   (b) Alluvial soil
   (c) Loamy soil
   (d) Well drained soil
2. Perfectly inelastic demand is equal to:
   (a) One
   (b) Infinite
   (c) Zero
   (d) Greater than one
3. Among the following which country has the highest life expectancy?
   (a) Denmark (b) Japan
   (c) U.S.A (d) Switzerland
4. Which racer won the Italian Grand Prix on 2nd September 2018?
   (a) Sebastian Vettel
   (b) Lewis Hamilton
   (c) Kimi Raikkonen
   (d) Valterri Bottas
5. Impeachment Proceedings against the President for violation of the Constitution can be initiated in:
   (a) Either House of Parliament
   (b) The Lok Sabha
   (c) The Rajya Sabha
   (d) The Supreme Court
6. In operating system, Round Robin Scheduling means:
   (a) A kind of scheduling
   (b) Repetition policy
   (c) A memory allocation policy
   (d) A process allocation policy
7. What was the theme for National Nutrition Week 2018 observed from 1st to 7th September 2018?
   (a) Better Nutrition: Key to Development
   (b) Life cycle approach for better Nutrition
   (c) Optimal Infant & Young Child Feeding Practices: Better Child Health
   (d) Go Further With Food
8. Stalactites and Stalagmites form due to the precipitation of:
   (a) $CaCO_3$ (b) $CaCl_2$
   (c) MgCL (d) $MgCO_3$
9. Soldering of two metals is possible because of the property of:
   (a) Viscosity
   (b) Osmosis
   (c) Cohesion
   (d) Surface tension
10. Chromosome designation of Turner sydrome is:
    (a) 44A + XO (b) 44A + XXX
    (c) 44A + XXY (d) 44A + XYY
11. Which day is celebrated as International Yoga Day?
    (a) July 21
    (b) April 23
    (c) September 21
    (d) June 21
12. The 73rd Constitutional amendment act is related to:
    (a) Foreign Exchange
    (b) Finance Commission
    (c) Panchayat Raj
    (d) RBI
13. Which state of India has made rain water harvesting compulsory for all houses?
    (a) Haryana
    (b) Maharashtra
    (c) Tamil Nadu
    (d) Punjab
14. FORTRAN is called:
    (a) Formula Translator
    (b) Format Translator
    (c) File Translator
    (d) Floppy Translator
15. Who among the following is not a Bharatanatyam dancer?
    (a) Leela Samson
    (b) Sonal Mansingh
    (c) Sitara Devi
    (d) Geeta Ramachandran
16. Name the Indo-Kazakhstan Joint Army Exercise held bet ween the Indian and Kazakhstan Army from 10 to 23 September 2018 in Otar region, Kazakhstan?
    (a) IndKash
    (b) Kazind
    (c) IKash
    (d) Kazhand
17. Whose army did Alexander, the Greek ruler confront on the banks of the river Jhelum?
    (a) Chandragupta Maurya
    (b) Ambi
    (c) Dhanananda
    (d) Porus
18. Which of the following is the right expansion of ILO?
    (a) International Law and Order
    (b) Inter-State Lawful Ordinance
    (c) Indian Legal Orientation
    (d) International Labour Organization
19. Ryder Cup is a famous tournament of:
    (a) Lawn Tennis
    (b) Badminton
    (c) Cricket
    (d) Golf
20. Sex-ratio is calculated as:
    (a) No. of children per 1,000 people in a country.
    (b) No. of males per 1,000 females in a country.
    (c) No. of females per 1,000 males in a country.
    (d) No. of people per 1,000 children in a country.

21. Who built "Purana Qila"?
(a) Akbar (b) Shershah
(c) Aurangzeb (d) Babar

22. The gas dissolved in water that makes it basic is:
(a) ammonia
(b) sulphur dioxide
(c) hydrogen
(d) carbon dioxide

23. When was RTI Act enacted in India ?
(a) 15th June, 2005
(b) 15th August, 2005
(c) 15th March, 2005
(d) 15th July, 2005

24. Who wrote 'Discovery of India'?
(a) Mahatma Gandhi
(b) Jawahar Lal Nehru
(c) APJ Abdul Kalam
(d) Bal Gangadhar Tilak

25. Who was the First Speaker of the Lok Sabha?
(a) Neelam Sanjeeva Reddy
(b) Hukum Singh
(c) GaneshVasudev Mavalankar
(d) K.S. Hegde

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

26. Cup : Coffee : : Bowl : ?
(a) Dish (b) Spoon
(c) Soup (d) Food

27. ZYX : : ABC : VUT : ?
(a) WXY (b) FGH
(c) YXW (d) XYW

28. ACE : HJL : : LNP : ?
(a) SUW (b) MOQ
(c) IJK (d) BDF

29. 96 : 32 : : 48 : ?
(a) 14 (b) 12
(c) 16 (d) 18

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

30. (a) Blend (b) Mingle
(c) Jumble (d) Clash

31. (a) ACE (b) ONE
(c) EON (d) REK

32. (a) 1716 (b) 2730
(c) 3360 (d) 4036

33. (a) 211 (b) 287
(c) 283 (d) 277

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

34. FU, LO, RI, ?
(a) RK (b) XC
(c) UF (d) RI

35. DE, GI, KN, ?
(a) PS (b) PR
(c) PT (d) TP

36. 2, 7, 16, ?, 46, 67
(a) 26 (b) 27
(c) 29 (d) 31

37. Five boys are sitting facing towards South. Raj is between Rohit and Vishal. Vishal is to the immediate right of Manoj and Manoj is to the immediate right of Shekhar. Who is sitting in the middle?
(a) Vishal (b) Manoj
(c) Raj (d) Shekhar

38. Arrange the given words in the sequence in which they occur in the dictionary.
(i) Application (ii) Approve
(iii) Appeal (iv) Astonishing
(a) ii, iii, iv, i (b) iii, ii, i, iv
(c) iii, i, ii, iv (d) i, ii, iii, iv

39. If in a certain code language, "STUBBORN" is written as "TUVCANQM". How is "TRAINING" written in that code language?
(a) USBJMHFM
(b) USBJMHMF
(c) JBSUFMHM
(d) USBJMHME

40. If "+" means "minus", "×" means "divided by", "÷" means "plus" and "–" means "multiplied by", then 300 × 10 – 5 + 36 ÷ 57 = ?
(a) 150 (b) 171
(c) 230 (d) 234

41. Which of the following interchanges in signs and number will make the given equation correct ?
7 × 9 + 5 = 68
(a) + and =, 5 and 6
(b) + and =, 7 and 9
(c) × and +, 5 and 7
(d) × and +, 7 and 9

42. A man walk 20 m towards north, then he turns right and walks 3 m, then turns left and walks 4 m and from there he walks 4 m towards east. How far and in which direction is he from his initial position?
(a) 25 m east
(b) 25 m north-east
(c) 20 m north
(d) 24 m north

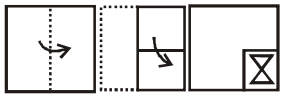
43. While Position for a family photo, the father is standing to the right of the son and left of the grandmother. The mother is sitting to the left of her daughter and right of the grandmother. Who is seated in the middle?
(a) Grandmother (b) Son
(c) Father (d) Mother

44. Identify the diagram that best represents the relationship among the given classes.
Country, State, City

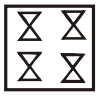
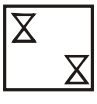
(a)  (b) 

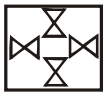
(c)  (d) 

45. 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:

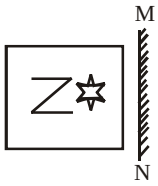


Answer figures:

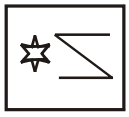
(a)  (b) 

(c)  (d) 

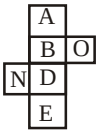
46. If a mirror is placed on the MN. then which of the answer figures is the right image of the given figure?
Question figure:



Answer figures:

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

47. From the given options, which figure can be formed by folding the figure given in the question?
Question figure:



Answer figures:

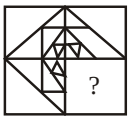
(a) 

(b) 

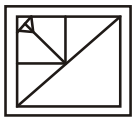
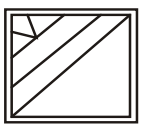
(c) 

(d) 

48. Which answer figure will complete the pattern in the question figure?
Question figure:

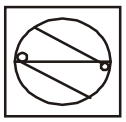
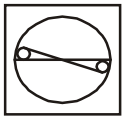
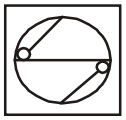
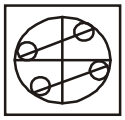


Answer figures:

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

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

Answer figures:

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

50. A word is represented by only one set of number 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 column 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 ne-xt by its column, for example, 'Q' can be represented by 22, 33 etc. and 'G' can be represented by 86, 89 etc. Similarly, you have to idenntify the set for the word 'CREED'.

Matrix-I

0	1	2	3	4	5
1	Q	D	S	P	Y
2	C	Q	D	S	P
3	P	C	Q	D	S
4	P	A	C	Q	D
5	P	R	A	C	A

Matrix-II

	5	6	7	8	9
5	D	E	I	R	I
6	E	D	R	H	H
7	J	R	D	E	N
8	R	G	G	N	G
9	F	F	N	F	D

(a) 32, 76, 65, 56, 77
(b) 54, 67, 78, 56, 79
(c) 43, 32, 65, 56, 77
(d) 32, 85, 56, 65, 78

51. If 7A = 5B = 2C; find A : B : C.
(a) 35:14:10
(b) 14:10:35
(c) 2:5:7
(d) 10:14:35

52. Which of the following numbers is not a prime number?
(a) 731 (b) 227
(c) 347 (d) 461

53. A factory buys 7 machines. 2 Machine A, 2 Machine B and rest Machine C. Prices of the machines are ₹ 95000, ₹ 75000 and ₹ 43000 respectively. Calculate the average cost of these machines?
(a) 71000 (b) 67000
(c) 75000 (d) 65500

54. The value of x for which the expressions 7 x + 13 and 13 x – 7 become equal is.
(a) –10/3 (b) 3/10
(c) –3/10 (d) 10/3

55. A can do a work in 15 days and B in 9 days. If they work on it together for 5 days, then what fraction of work is:
(a) 1/6 (b) 3/7
(c) 1/3 (d) 1/9

56. Rehman walks at 8 km/hr and Roma cycles at 13 km/hr towards each other. What was the distance between them when they started if they meet after 36 minutes?
(a) 12.6 kms
(b) 18.9 kms
(c) 15.8 kms
(d) 9.5 kms

57. Two students appeared for an examination. One of them secured 24 marks more than the other and his marks were 65% of the sum of their marks. The marks obtained by them are.
(a) 78 and 54
(b) 85 and 61
(c) 67 and 43
(d) 52 and 28

58. When a discount of 25% is given on a wedding gown, the profit is 32%. If the discount is 17%, then the profit is :
(a) 46.08 percent
(b) 49 percent
(c) 51.92 percent
(d) 43.16 percent

59. At 24% discount the selling price of a washing machine is ₹ 38000, what is the selling price if the discount is 40%?
(a) ₹ 18000 (b) ₹ 30000
(c) ₹ 22320 (d) ₹ 31920

60. Dodecahedron has 20 vertices. How many edges does it have ?
(a) 30 (b) 16
(c) 12 (d) 24

61. The diagonal of a square is equal to the side of an equilateral triangle. If the area of the square is $15\sqrt{3}$ sq cm, what is the area of the equilateral triangle?
(a) $45/\sqrt{2}$ sq cm (b) $45\sqrt{2}$ sq cm
(c) 45 sq cm (d) 45/2 sq cm

62. If the curved surface area of a right circular cone is 3080 sq cm and its slant height is 35 cm, find its total surface area?
(a) 11088 sq cm
(b) 1848 sq cm
(c) 5544 sq cm
(d) 2772 sq cm

63. Sandy and Mandy do 8/13th part of a work and the rest of the work was completed by Andy. If Sandy, Mandy and Andy take the same work for ₹ 2600, then what is the share (in ₹) of Andy?
(a) 1600 (b) 1400
(c) 800 (d) 1000

64. A solid cone of height 24 cm and having radius of base 8 cm is melted to form a solid cylinder of radius 6 cm and height 6 cm. In the whole process what per cent of material is wasted?
(a) 48.5 (b) 37.5
(c) 57.8 (d) 64

65. If two successive discounts of 20% and 30% are given, what is the net discount (in %)?
(a) 40 (b) 44
(c) 56 (d) 60

66. In what ratio sugar at ₹ 30 per kg should be mixed with sugar at ₹ 45 per kg so that on selling the mixture at ₹ 42 per kg there is a profit of 20%?
(a) 2 : 1 (b) 2 : 3
(c) 5 : 2 (d) 3 : 7

67. The average of 11 numbers is 7. If every number is doubled, what will be the new average of the numbers?
(a) 3.5 (b) 7
(c) 10.5 (d) 14

68. Amit donated 20% of his income to a school and deposited 20% of the remainder in his bank. If he has ₹ 12800 now, what is the income (in ₹) of Amit?
(a) 18000
(b) 20000
(c) 24000
(d) 32000

69. Two trains are moving in the opposite directions at speeds of 43 km/h and 51 km/h respectively. The time taken by the slower train to cross a man sitting in the faster train is 9 seconds. What is the length (in metre) of the slower train?
(a) 235 (b) 338.4
(c) 470 (d) 940

70. A certain sum of money amounts to ₹ 918 in 2 years and ₹ 969 in 3.5 years at simple interest. What is the rate of interest (in % per annum)?
(a) 4 (b) 5
(c) 6 (d) 8

71. For what value of k, the expression $x^6 - 18x^3 + k$ will be a perfect square ?
(a) –9 (b) –81
(c) +9 (d) +81

72. Simple Interest received by a person in 10 years on a principal of ₹ 9500 is 130% of the principal. What is the rate of interest (in %) per annum?
(a) 12
(b) 13
(c) 15
(d) 19

Directions (Q. 73-75): The table given below represents the amount of education loan (in ₹ crores) disbursed by 5 banks of a country over 5 years.

Amount of education loan disbursed
(In ₹ crores)

Year	Bank1	Bank 2	Bank 3	Bank 4	Bank 5
2010	265	65	138	109	80
2011	295	118	165	123	103
2012	317	85	195	125	140
2013	323	103	178	142	143
2014	352	122	211	157	158

73. What is the percentage increase in education loan disbursed by Bank 2 from 2010 to 2014?
(a) 85.42
(b) 87.69
(c) 89.21
(d) 83.18

74. Which banks show a continuous trend of increase/decrease in loan amount disbursed over 5 years ?
(a) Bank 1 and Bank 4
(b) Bank 1, Bank 4 and Bank 3
(c) Bank 1, Bank 4 and Bank 5
(d) Bank 4 and Bank 5

75. What can be said about the two following ratios?
I. Loan amount disbursed by Bank 1 in 2011/Loan amount disbursed by Bank 2 in 2014
II. Loan amount disbursed by Bank 3 in 2014/ Loan amount disbursed by Bank 4 in 2011
(a) I > II
(b) I < II
(c) I = II
(d) No relation

SECTION-III : GENERAL TEST

1. (a) Black soil is most suitable for the cultivation of cotton. The deep and medium black lava soil of the Deccan and Malwa plateaus is considered ideal, though it can be grown on alluvial and red soil as well. The black cotton soil is also known as regur.

2. (c) Price Elasticity of Demand is a measure of the relationship between a change in the quantity demanded of a particular good and a change in its price. It measures the responsiveness of demand to changes in price for a particular good. If the price elasticity of demand is equal to 0, demand is perfectly inelastic (i.e., demand does not change when price changes).

3. (b) As per the World Health Organization data for 2015, Japan has the highest life expectancy of 84 years in the world. Japanese men and women are expected to live 80 years and 87 years respectively. The report of Japanese Ministry of Health, Labor and Welfare, released in August 2015, put the life expectancy for men and women at 80.5 and 86.83 years respectively.

4. (b) On 2nd September 2018, Lewis Hamilton won the Italian Grand Prix held at Autodromo Nazionale Monza track, in Italy. Mercedes driver Lewis Hamilton driver finished in the first place and won the Italian Grand Prix. He was followed by Ferrari driver Kimi Raikkonen in the 2nd place. Mercedes driver Valterri Bottas finished in the third spot and Ferrari driver Sebastian Vettel finished in the fourth place. This is Lewis Hamilton's 5th Italian Grand Prix title, with this he has equaled Michael Schumacher recor d (of 5 Italian Grand Prix wins).

5. (a) According to Article 61 of Indian Constitution, when a President is to be impeached for violation of the Constitution, the charge shall be preferred by either House of Parliament. It adds that no such charge shall be preferred unless:

- the proposal to prefer such charge is contained in a resolution which has been moved after at least fourteen days' notice in writing signed by not less than one-fourth of the total number of members of the House has been given of their intention to move the resolution, and
- such resolution has been passed by a majority of not less than two-thirds of the total membership of the House.

6. (a) Round robin is the scheduling algorithm used by the CPU during execution of the process. Round robin is designed specifically for time sharing systems. It is similar to first come first serve scheduling algorithm but the preemption is the added functionality to switch between the processes.

7. (d) National Nutrition Week is observed every year from 1st to 7th September all over the country to spread awareness regarding importance of nutrition. Theme of the year 2018 is – 'Go Further With Food'. This week is observed to evaluate the appropriate techniques to prevent and control the nutritional problems through deep research and monitor the condition of the country for the diet and nutrition, to aware people through the orientation training about health and nutrition.

8. (a) Stalactites and stalagmites are formed by water dripping or flowing from fractures on the ceiling of a cave. The dominant mineral in them is calcite (calcium carbonate) or $CaCaO_3$. Their largest displays are formed in caves of limestone and dolomite. Other minerals that may be deposited include other carbonates, opal, chalcedony, limonite, and some sulfides.

9. (c) Soldering is the process of joining two metals by the use of a solder alloy, and it is one of the oldest known joining techniques. It is possible because of the property of cohesion, the interaction between adjacent parts of the same body and as acting throughout the interior of substance. Soldering leads to alloy formation at the layer between two metals.

10. (a) Turner syndrome is a rare chromosomal disorder characterized by partial or complete loss (monosomy) of one of the X chromosomes that affects females. Individuals with Turner syndrome have only 45 chromosomes, including just a single X chromosome. This monosomic has a chromosome complement of 44 autosomes and one X chromosome (44 + XO). The abnormal condition probably originates from exceptional egg or sperm with no X chromosome.

11. (d) International Yoga Day is celebrated on 21 June. The first International Day of yoga was observed all over the World on June 21, 2015. The day was created by United Nations General Assembly on December 11, 2014 at the initiative of Indian Prime Minister Narendra Modi.

12. (c) The Constitution (Seventy third Amendment) Act, 1992 is related to Panchayati Raj in India. It added Part IX of the Constitution of India, related to Panchayats, and the Eleventh Schedule to the Constitution which deals with matters on which the Panchayats may be devolved with powers and responsibility by the State Legislatures by law.

13. (c) Rainwater harvesting has been made compulsory for every building in Tamil Nadu to avoid ground water depletion. Since its implementation, Chennai saw a 50 percent rise in water level in five years and the water quality significantly improved. Rainwater harvesting is the accumulation and deposition of rainwater for reuse on-site, rather than allowing it to run off.

14. (a) Fortran is a general-purpose, imperative programming language that is especially suited to numeric computation and scientific computing. Its name is a contraction of Formula Translation. It aims to provide a way to tell computers to calculate complicated mathematical expressions with more ease than assembly language.

15. (c) Sitara Devi was an eminent Indian dancer of the classical Kathak style of dancing. Rabindranath Tagore described her as Nritya Samragini (empress of dance) after watching her performance when she was just 16 years old. She is still described as the Kathak queen.

16. (b) On September 5, 2018, the Ministry of Defence announced the commencement of the Indo-Kazakhstan Joint Army Exercise 'KAZIND' between the Indian and Kazakhstan Army from 10 to 23 Sep 2018 in Otar region, Kazakhstan. This is the third joint military exercise between the two countries. The second edition was held in India in 2017.

17. (d) The Battle of the Hydaspes was fought by Alexander the Great in 326 BC against King Porus of the Paurava kingdom on the banks of the river Hydaspes (Jhelum) in the Punjab near Bhera. The battle resulted in a complete Macedonian victory and the annexation of the Punjab.

18. (d) ILO stands for International Labour Organization. It is a United Nations agency dealing with labour issues, particularly international labour standards, social protection, and work opportunities for all. Formed in 1919, it is headquartered in Geneva, Switzerland.

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

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22. (a) Ammonia gas that dissolves in water forms a solution of ammonium hydroxide (NH_4OH). This solution (including the gas) is a strong base and will make the solution alkaline.

$H_2O + NH_3 \Leftrightarrow OH^- + NH_4^+$

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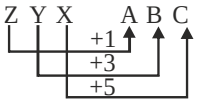
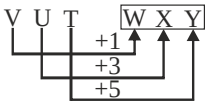
26. (c) As, Coffee is related to cup. Similarly, soup is related to bowl.

27. (a) As,

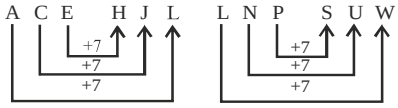


Similarly



Finally, the missing term is EFG

28. (a) As, Similarly,



Finally, the missing term is SUW

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ONE = 15 + 14 + 5 = 34
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Finally, ACE is odd word.

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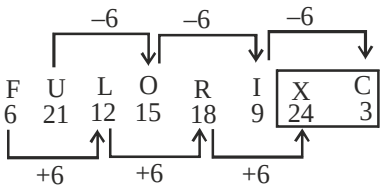
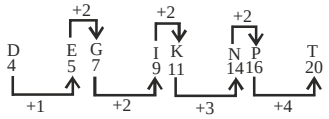
34. (b)



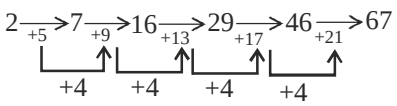
Finally, the missing term is XC.

35. (c)



Finally, the missing term is PT

36. (c)



Finally, the missing number is 29.

SECTION-III : GENERAL TEST

1. (a) Black soil is most suitable for the cultivation of cotton. The deep and medium black lava soil of the Deccan and Malwa plateaus is considered ideal, though it can be grown on alluvial and red soil as well. The black cotton soil is also known as regur.

2. (c) Price Elasticity of Demand is a measure of the relationship between a change in the quantity demanded of a particular good and a change in its price. It measures the responsiveness of demand to changes in price for a particular good. If the price elasticity of demand is equal to 0, demand is perfectly inelastic (i.e., demand does not change when price changes).

3. (b) As per the World Health Organization data for 2015, Japan has the highest life expectancy of 84 years in the world. Japanese men and women are expected to live 80 years and 87 years respectively. The report of Japanese Ministry of Health, Labor and Welfare, released in August 2015, put the life expectancy for men and women at 80.5 and 86.83 years respectively.

4. (b) On 2nd September 2018, Lewis Hamilton won the Italian Grand Prix held at Autodromo Nazionale Monza track, in Italy. Mercedes driver Lewis Hamilton driver finished in the first place and won the Italian Grand Prix. He was followed by Ferrari driver Kimi Raikkonen in the 2nd place. Mercedes driver Valterri Bottas finished in the third spot and Ferrari driver Sebastian Vettel finished in the fourth place. This is Lewis Hamilton's 5th Italian Grand Prix title, with this he has equaled Michael Schumacher recor d (of 5 Italian Grand Prix wins).

5. (a) According to Article 61 of Indian Constitution, when a President is to be impeached for violation of the Constitution, the charge shall be preferred by either House of Parliament. It adds that no such charge shall be preferred unless:

- the proposal to prefer such charge is contained in a resolution which has been moved after at least fourteen days' notice in writing signed by not less than one-fourth of the total number of members of the House has been given of their intention to move the resolution, and
- such resolution has been passed by a majority of not less than two-thirds of the total membership of the House.

6. (a) Round robin is the scheduling algorithm used by the CPU during execution of the process. Round robin is designed specifically for time sharing systems. It is similar to first come first serve scheduling algorithm but the preemption is the added functionality to switch between the processes.

7. (d) National Nutrition Week is observed every year from 1st to 7th September all over the country to spread awareness regarding importance of nutrition. Theme of the year 2018 is – 'Go Further With Food'. This week is observed to evaluate the appropriate techniques to prevent and control the nutritional problems through deep research and monitor the condition of the country for the diet and nutrition, to aware people through the orientation training about health and nutrition.

8. (a) Stalactites and stalagmites are formed by water dripping or flowing from fractures on the ceiling of a cave. The dominant mineral in them is calcite (calcium carbonate) or $CaCaO_3$. Their largest displays are formed in caves of limestone and dolomite. Other minerals that may be deposited include other carbonates, opal, chalcedony, limonite, and some sulfides.

9. (c) Soldering is the process of joining two metals by the use of a solder alloy, and it is one of the oldest known joining techniques. It is possible because of the property of cohesion, the interaction between adjacent parts of the same body and as acting throughout the interior of substance. Soldering leads to alloy formation at the layer between two metals.

10. (a) Turner syndrome is a rare chromosomal disorder characterized by partial or complete loss (monosomy) of one of the X chromosomes that affects females. Individuals with Turner syndrome have only 45 chromosomes, including just a single X chromosome. This monosomic has a chromosome complement of 44 autosomes and one X chromosome (44 + XO). The abnormal condition probably originates from exceptional egg or sperm with no X chromosome.

11. (d) International Yoga Day is celebrated on 21 June. The first International Day of yoga was observed all over the World on June 21, 2015. The day was created by United Nations General Assembly on December 11, 2014 at the initiative of Indian Prime Minister Narendra Modi.

12. (c) The Constitution (Seventy third Amendment) Act, 1992 is related to Panchayati Raj in India. It added Part IX of the Constitution of India, related to Panchayats, and the Eleventh Schedule to the Constitution which deals with matters on which the Panchayats may be devolved with powers and responsibility by the State Legislatures by law.

13. (c) Rainwater harvesting has been made compulsory for every building in Tamil Nadu to avoid ground water depletion. Since its implementation, Chennai saw a 50 percent rise in water level in five years and the water quality significantly improved. Rainwater harvesting is the accumulation and deposition of rainwater for reuse on-site, rather than allowing it to run off.

14. (a) Fortran is a general-purpose, imperative programming language that is especially suited to numeric computation and scientific computing. Its name is a contraction of Formula Translation. It aims to provide a way to tell computers to calculate complicated mathematical expressions with more ease than assembly language.

15. (c) Sitara Devi was an eminent Indian dancer of the classical Kathak style of dancing. Rabindranath Tagore described her as Nritya Samragini (empress of dance) after watching her performance when she was just 16 years old. She is still described as the Kathak queen.

16. (b) On September 5, 2018, the Ministry of Defence announced the commencement of the Indo-Kazakhstan Joint Army Exercise 'KAZIND' between the Indian and Kazakhstan Army from 10 to 23 Sep 2018 in Otar region, Kazakhstan. This is the third joint military exercise between the two countries. The second edition was held in India in 2017.

17. (d) The Battle of the Hydaspes was fought by Alexander the Great in 326 BC against King Porus of the Paurava kingdom on the banks of the river Hydaspes (Jhelum) in the Punjab near Bhera. The battle resulted in a complete Macedonian victory and the annexation of the Punjab.

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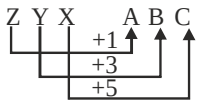
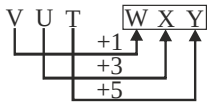


Similarly



Finally, the missing term is EFG

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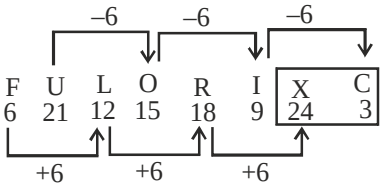

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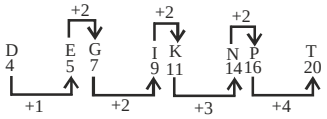
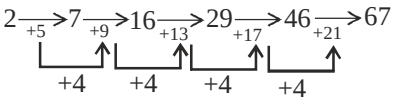


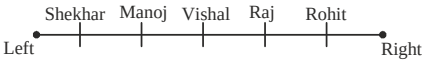
Finally, the missing term is PT

36. (c)



Finally, the missing number is 29.

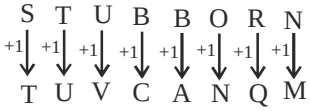
37. (a) According to question,



So, Vishal is sitting in middle.

38. (c) According to dictinary, the sequence of words are:
(iii) Appeal, (i) Application, (ii) Approve, (iv) Astonishing.

39. (b) As,



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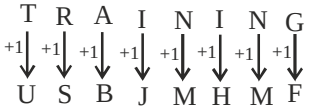
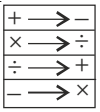


Finally, TRAINING can be written as USBJMHMF.

40. (b) If



$\therefore$ $300 \times 10 - 5 + 36 - 57$
$= 300 \div 10 \times 5 - 36 + 57$
$= 30 \times 5 - 36 + 57$
$= 150 - 36 + 57$
$= 207 - 36 = 171$

41. (c) $7 \times 9 + 5 = 68$

Interchange in sign, × and +, 5 and 7

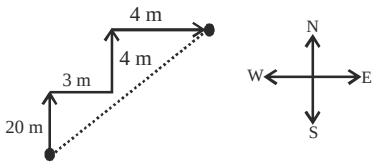
$5 + 9 \times 7 = 68$

$5 + 63 = 68$

$= 68 = 68$

So, the equation is co rrect. If we interchange × and + and 5 and 7.

42. (b)

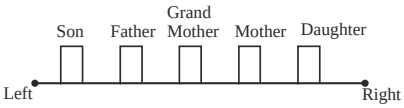


Total distance = 20 + (4 + 4 – 3)

= (20 + 5) = 25 m

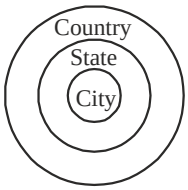
and the direction is northeast.

43. (a)



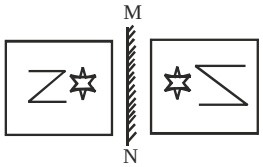
So, grandmother is seated in the middle.

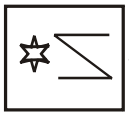
44. (d) City is in the state and state is in Country. Then the relationship among Country, City and State is represented as given below—



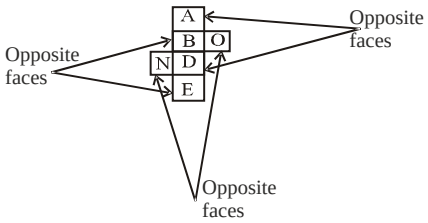
45. (a) A piece of paper is folded and punched, when opened it will appear as given below—

46. (c)



Finally, the right image of given figure is  .

47. (b)



48. (b) Answer figure (b) will complete the pattern of the given question figure.

49. (b)

50. (a) C = 21, (32), 43, 54

R = 58, 67, (76), 85

E = 56, (65), 78

E = (56), 65, 78

D = 12, 23, 34, 45, 55, (66), 99

For 'CREED', the set of words are 32, 76, 65, 56, 77.

51. (d) It is given that

Let $7A = 5B = 2C, = k$

$A = \frac{k}{7}, \quad B = \frac{k}{5}, \quad C = \frac{k}{2}$

Ratio of $A : B : C = \frac{k}{7} : \frac{k}{5} : \frac{k}{2}$

Hence, required ratio = 10 : 14 : 35

52. (a) 731 is not a prime number.

53. (b) Average cost of machines

$$= \frac{95000 \times 2 + 75000 \times 2 + 43000 \times 3}{2 + 2 + 3}$$

$$= \frac{190000 + 150000 + 129000}{7}$$

$$= \frac{469000}{7} = ₹\ 67000$$

54. (d) $7x + 13 = 13x - 7$

$\Rightarrow \quad 13x - 7x = 13 + 7$

$6x = 20$

$x = \frac{20}{6} = \frac{10}{3}$

55. (d) A's 1 day work $= \frac{1}{15}$

B's 1 day work $= \frac{1}{9}$

(A + B)'s 5 days work

$$= 5\left(\frac{1}{15} + \frac{1}{9}\right)$$

$$= 5\left(\frac{3+5}{45}\right) = \frac{8}{9}$$

Left work $= \left(1 - \frac{8}{9}\right) = \frac{1}{9}$

56. (a) Total distance covered

$$= 8 \times \frac{36}{60} + 13 \times \frac{36}{60}$$

$$= 8 \times \frac{3}{5} + 13 \times \frac{3}{5}$$

$$= \frac{24 + 39}{5} = \frac{63}{5}$$

$= 12{\cdot}6$ km

57. (d) Let the number of marks of other student be x

Then one student gets = x + 24

According to question,

$$\Rightarrow \quad x + 24 = \frac{65}{100}(2x + 24)$$

$$= \frac{13}{20}(2x + 24)$$

$\Rightarrow \quad 20x + 24 \times 20 = 26x + 24 \times 13$

$\Rightarrow \quad 6x = 7 \times 24$

$\therefore \quad x = \frac{7 \times 24}{6} = 28$

Marks of other students

= 28 + 24 = 52

58. (a) Let M.P. be ₹100.

After 25% discount

S.P. of gown $= 100 \times \frac{75}{100} = ₹\ 75.$

For 32% profit

C.P. of gown $= \frac{100}{132} \times 75$

$$= \frac{25 \times 75}{33}$$

$$= ₹\ \frac{625}{11}$$

On 17% discount, S.P.

= (100 – 17) = ₹ 83

Profit $= \left(83 - \frac{625}{11}\right)$

$= \left(\frac{913 - 625}{11}\right)$

$= ₹\ \frac{288}{11}$

Required profit %

$= \frac{288}{11} \times \frac{11}{625} \times 100$

$= \frac{288 \times 4}{25} = \frac{1152}{25} = 46{\cdot}08\%$

59. (b) Let M.P. be x

According to question,

$\Rightarrow \quad 38000 = \frac{x \times 76}{100}$

$\therefore \quad x = \frac{38000 \times 100}{76}$

$= 1000 \times 50 = 50000$

Selling price on 40% discount

$= \frac{60 \times 50000}{100}$

$= \frac{3000000}{100} = ₹\ 30000$

60. (a) V = 20, E = ? and F = 12

According to theorem,

V + F = E + 2

20 + 12 = E + 2

E = 32 – 2 = 30

61. (d) Let the side of a square be x.

Area of square = x^2

$\Rightarrow \quad 15\sqrt{3} = x^2$

$2 \times 15\sqrt{3} = 2x^2 = d^2$

$\because \quad (\text{diagonal})^2 = d^2$

$\therefore \quad d^2 = x^2 + x^2 = 2x^2$

Area of an equilateral triangle

$= \frac{\sqrt{3}}{4} \times d^2 = \frac{\sqrt{3}}{4} \times 30\sqrt{3}$

$= \frac{90}{4} = \frac{45}{2}$ sq. cm

62. (c) Curved surface area of cone = πrl

$\Rightarrow \quad 3080 = \frac{22}{7} \times r \times 35 = 110r$

$\Rightarrow \quad r = \frac{3080}{110} = 28$

$h^2 = \sqrt{l^2 - r^2}$

$= \sqrt{35^2 - 28^2} = 21$

Total surface area of cone

$= \pi rl + \pi r^2$

$= \pi r\ (l + r)$

$= \frac{22}{7} \times 28\,(35 + 28)$

$= 88 \times 63 = 5544\ cm^2$

63. (d) Sandy and Mandy do $\frac{8}{13}$th part of work.

$\therefore \quad$ Work done by Andy $= 1 - \frac{8}{13}$

$= \frac{5}{13}$ th part

$\therefore \quad$ Andy's share $= ₹\ \left(\frac{5}{13} \times 2600\right)$

$= ₹\ 1000$

64. (c) Volume of cone $= \frac{1}{3}\pi r^2 h$

$= \frac{1}{3} \times \pi \times 8 \times 8 \times 24$ cu. cm

$= 512\pi$ cu. cm.

Volume of cylinder $= \pi R^2 H$

$= \pi \times 6 \times 6 \times 6$ cu. cm.

$= 216\pi$ cu. cm.

Wastage $= 512\pi - 216\pi$

$= 296\pi$ cu. cm.

Percentage wastage

$= \frac{296\pi}{512\pi} \times 100$

$= 57.8\%$

65. (b) Single equivalent discount of two successive discounts

$= \left(x + y - \frac{xy}{100}\right)\%$

$= \left(30 + 20 - \frac{30 \times 20}{100}\right)\%$

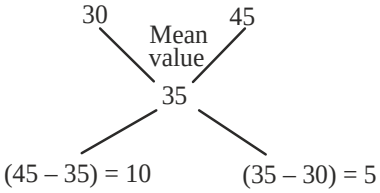
$= (50 - 6)\% = 44\%$

66. (a) C.P. of mixture $= \frac{42 \times 100}{120}$

$= ₹\ 35$ per kg.

By the rule of alligation,

Type-I Type-II



$\therefore \quad$ Required ratio = 10 : 5 = 2 : 1.

67. (d) If each number is doubled, their average also gets doubled.

$\therefore \quad$ New average = 2 × 7 = 14

68. (b) Let Amit's income be ₹ 100.

Donation to school $= ₹\ 20$

Amount deposited in bank

$= ₹\left(\frac{80 \times 20}{100}\right) = ₹\ 16$

Savings $= ₹\ (100 - 20 - 16)$

$= ₹\ 64$

When savings = ₹ 64,

Income = ₹ 100

When savings = ₹ 12800,

Income $= ₹\ \left(\frac{100}{64} \times 12800\right)$

$= ₹\ 20000$

69. (a) Relative speed = (43 + 51) kmph = 94 kmph

$= \left(\frac{94 \times 5}{18}\right)$ metre/second

$= \left(\frac{235}{9}\right)$ metre/second

$\therefore \quad$ Length of slower train

$= \left(\frac{235}{9} \times 9\right)$ metre = 235 metre

70. (a) Interest for 1.5 years

$= ₹\ (969 - 918) = ₹\ 51$

$\therefore$ Interest for 2 years

$= \frac{51}{1.5} \times 2 = ₹\ 68$

$\therefore$ Principal $= ₹\ (918 - 68) = ₹\ 850$

$\therefore$ Rate $= \frac{\text{Interest} \times 100}{\text{Principal} \times \text{Time}}$

$= \frac{68 \times 100}{850 \times 2} = 4\%$ per annum

71. (d) $x^6 - 18x^3 + k = (x^3)^2 - 2 \times x^3 \times 9 + k$

$\because$ $(a - b)^2 = a^2 - 2ab + b^2$

$\therefore$ $k = 9^2 = 81$

72. (b) Interest $= ₹ \left(\frac{9500 \times 130}{100}\right)$

$= ₹\ 12350$

$\therefore$ Rate $= \frac{\text{S.I.} \times 100}{\text{Principal} \times \text{Time}}$

$= \frac{12350 \times 100}{9500 \times 10}$

$= 13\%$ per annum

73. (b) Required percentage increase

$= \left(\frac{122 - 65}{65}\right) \times 100$

$= \frac{5700}{65} = 87.69\%$

74. (c) Required answer = Bank 1, Bank 4 and Bank 5

75. (a) $I = \frac{295}{122}$

$II = \frac{211}{123}$

Clearly, I > II

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