| Section | No. of Questions | Max Marks |
| :--- | :--- | :--- |
| Arithmetic Ability | 30 | 30 |
| Reasoning \& General Intelligence | 30 | 30 |
| General Awareness | 30 | 30 |
| General Science | 30 | 30 |
| Total | 120 | 120 |

## Numerical Ability <br> 5. 110

4. 112

Directions (1-5): Study the following information carefully and answer the questions given below:

On the occasion of a cultural program in a stadium, there are 400 artists in all who are participating in four different events viz- Drama, Dance, Skit, and Singing.
2. What is the difference between the male artists participating in Skit and the female artists participating in Singing?

1. 20
2. 24
3. 22

The ratio of male to female artists is $2: 3.25 \%$ of the female artists are participating in Drama. $40 \%$ of the female artists are participating in Dance. The remaining female artists are participating in Skit and singing in the ratio of $4: 3$. The ratio of male artists who are participating in Drama and other events together is $1: 7.25 \%$ of those male artists who are not participating in Drama are participating in Singing. The remaining male artists are participating in Dance and Skit in the ratio of 3:4.

1. What is the total number of female artists who are participating in Drama and Skit together?
2. 106
3. 104
4. 108
5. What is the total number of artists participating
in Dance and Drama together?
6. 221
7. 222
8. 208
9. 228
10. 218
11. What is the ratio of the male artists participating in Singing to the female artists participating in Skit?
12. $39: 47$
13. $38: 47$
14. $36: 47$
15. $35: 48$
16. $35: 47$

Directions (6-10): In the following number series only one number is wrong. Find out the wrong number.
6. 749,8901, 1089, 1345, 1669, 2069

1. 1669
2. 749
3. 890
4. 2069
5. 1089
6. 39, 235, 1647, 13289, 118615
7. 235
8. 39
9. 118615
10. 1647
11. 13289
12. 53, 217, 1943, 31103, 775551.77555
13. 217
14. 1943
15. 53
16. 31103
17. 2394, 798, 3192, 688.4, 3830.4, 547.2
18. 3830.4
19. 547.2
20. 688.4
21. 798
22. 3192
23. $28,31,68,216,896$
24. 896
25. 28
26. 31
27. 216
28. 68
29. A dishonest trader marks up his goods by $80 \%$ and gives a discount of $25 \%$. Besides, he gets $\mathbf{2 0 \%}$ more amount per kg from a wholesaler and sells $10 \%$ less per kg to customers.
What is the overall profit percentage?
30. $82 \%$
31. $76 \%$
32. $78 \%$
33. $75 \%$
34. 80\%
35. A man ordered 4 pairs of black shoes and some pair of brown shoes. The price of black shoes is twice to that of brown shoes. While preparing the bill the clerk interchanged the number of black and brown pairs of shoes by mistake, which increase the bill by $\mathbf{4 0 \%}$. What is the total number of black and brown shoes?
36. 12
37. 16
38. 14
39. 10
40. 18
41. On what sum of money will the Cl of 2 years be the same as the SI on rs. 416 for 10 years, the rate of interest being $8 \%$ pa.?
42. Rs. 2500
43. Rs. 1500
44. Rs. 3000
45. Rs. 2000
46. Rs. 4000
47. The speed of the current is $4 \mathrm{~km} / \mathrm{hr}$. A boat goes 10 km upstream and comes back to starting point in $\mathbf{8 0} \mathbf{~ m i n}$. What is the speed of the boat in still water? (in km/hr)
48. 10
49. 16
50. 14
51. 12
52. 8
53. Two trains $P$ and $Q$ starts from Delhi and Patna towards each other. After passing each other they take $\mathbf{4}$ hrs $\mathbf{4 8}$ min and $\mathbf{3}$ hrs $\mathbf{2 0}$ min to reach their destination respectively. if the train from Delhi is moving at 45 km/hr, then find the speed of the other train.
54. $58 \mathrm{~km} / \mathrm{hr}$
55. $54 \mathrm{~km} / \mathrm{hr}$
56. $56 \mathrm{~km} / \mathrm{hr}$

## 4. $52 \mathrm{~km} / \mathrm{hr}$

## 5. $50 \mathrm{~km} / \mathrm{hr}$

16. Two pipes can fill a tank with water in 15 hrs and 12 hrs respectively and a third pipe can empty it in 4hrs. if the pipes are opened at 8, 9 and 11 am respectively the bank will be emptied at
17. 2.40 pm
18. 1.40 pm
19. 3.20 pm
20. 2.50 pm
21. 1.50 pm
22. A path of uniform width runs around inside a rectangular field 38 m long and 32 m wide. if the path occupies $600 \mathrm{~m}^{\mathbf{2}}$, then the width of the path is:
23. 10 m
24. 6 m
25. 4 m
26. 5 m
27. 8 m
28. What time will be taken by a boat to cover a distance of 80 km along the stream , if speed of boat in still water is $\mathbf{6} \mathbf{~ k m p h}$ and speed of stream is $\mathbf{2} \mathbf{k m p h}$ ?
29. 10 kmph
30. 20 kmph
31. 25 kmph
32. 30 kmph
33. 40 kmph
34. Ravi can row a certain distance downstream in 8 hours and can return the same distance in 12 hours. If the stream flows at the rate of 4 kmph , then find the speed of Ravi in still water ?
35. 10 kmph
36. 20 kmph
37. 25 kmph
38. 30 kmph
39. 40 kmph
40. A man speed in still water is 15 kmph , while river is flowing with a speed of 3 kmph and time taken to cover a certain distance upstream is 3 hours more than taken to cover the same distance downstream. Find the distance.
41. 100 km
42. 103 km
43. 108 km
44. 110 km
5.115 km
21.Two cars of same length are running in in the same direction with speed 60 kmph and 90 kmph. The latter completely cross the man in 24sec. The length of the each bus is
45. 100
46. 150
47. 180
48. 200
49. 250
50. Two equal bottles are filled with water and milk. The amount of water in each container is $\mathbf{2 0 \%}$ and $\mathbf{3 0 \%}$. What is the ratio of milk in both the bottles respectively ?
51. $2: 3$
52. $4: 5$
53. 1:2
54. $8: 7$
55. $7: 8$
56. Ravi bought a car at 30\% discount on its original price.He sold it with $50 \%$ increase on the price he bought it. The new sale price is by what percent more than the original price?
57. $2 \%$
58. $3 \%$
59. $4 \%$
60. $5 \%$
61. $6 \%$
62. Among a group of 5 men and 6 women , 4 members is to be selected for an event. Find the probability that at least one man is selected ?
63. $20 / 21$
64. $21 / 22$
65. $15 / 16$
66. $10 / 15$
67. None of these
68. From the salary, Pavan spent $15 \%$ for house rent, 5\% for children's education and 15\% for Entertainment. Now he left with Rs.26,000. His salary is
69. 10000
70. 15000
71. 18000
72. 25000
73. 40000
74. A and $B$ invested in a business. They earned some profit which they divided in the ratio of 2:3. If $P$ invested Rs. 15,000 , the amount invested by $B$ is
75. 10500
76. 12500
77. 15500
78. 20500
79. 22500
80. Milk and water are in the ratio of 3:2 in a mixture of 70 liters. How much water should be added so that the rate of milk and water become 2:3?
81. 35
82. 38
83. 40
84. 45
85. 60
86. length of a rectangle is reduced by $40 \%$. By what percent would the width have to be increased to maintain the original area?
87. $66.60 \%$
88. $60.65 \%$
89. $66.66 \%$
90. $50.55 \%$
91. None of these
92. A clock strike once at 1 o'clock, twice at 2 o'clock, thrice at 3 o'clock and so on. What is the total number of strikings in a day ?
(a) 24
(b) 72
(c) 144
(d) 156
93. A clock strike once at 1 o'clock, twice at 2 o'clock, thrice at 3 o'clock and so on. What is the total number of strikings in a day ?
(a) 24
(b) 72
(c) 144
(d) 156

## Reasoning

Directions (31-35): Study the following information carefully and answer the questions given below:

There are eight persons viz, A, B, C, D, E, F, H and J are sitting around a circle. Five of them are facing towards the centre.
They read different newspapers viz, Hindustan Times (H.T), The Indian Express, The Hindu, The Economic Times, Navbharat Times, Washington Post, The Herald and The Dawn, but not necessarily in the same order. D is facing away from the centre but reads neither "The Hindus 'nor' The Indian Express.' The one who reads The Washington post sits exactly between $F$ and $B$. $C$ is on the immediate right of $H$, who is not facing away from the centre. The one who reads The Indian Express is not the neighbour of $B$. The one who reads The Economic Times is on the immediate right of $C$. There are three persons between $H$ and $B$. $E$ sits second to the left of $D$ and he reads The Indian Express. $F$ is an immediate neighbour of both $C$ and the one who reads The Washington Post. The Economics Times is read by either H or B. The one who read 'The Herald' is facing towards the centre. D sits on the immediate right of the one who read Navbharat Times. The one who reads The Dawn sits exactly between J and the one who reads The Hindu. A does not read The Washington Post. The one who is on the immediate right of H read the Hindu and is not facing the centre.

## 31. Which of the following papers is read by the one who sits on the immediate right of $J$ ?

1. The Hindu
2. The Herald
3. The Dawn
4. Navbharat Times
5. The Economic Times
6. Which of the following is matched correctly?
7. A- Hindustan Times
8. H- The Dawn
9. C- The Economic Times
10. B- The Herald
11. E- The Hindu

## 33. Which of the following groups is facing away from the centre?

1. $A, B, D$
2. A, C, D
3. $E, A, D$
4. J, C, D
5. $H, D, B$
6. If $D$ is related to $A$ and in the same way $H$ is related to $C$ in a certain way, then $F$ is related to
7. J
8. C
9. None
10. A
11. B

## 35. How many persons sit between the one who reads The Dawn and the one who reads Navbharat Times?

1. Three
2. Two
3. One
4. None
5. Other than the given options

Directions (36-40): Study the following information carefully and answer the questions given below:

Seven person $P, Q, R, S, T, U$ and $V$ like different dance forms, viz- Mask dance Bihu, Nati, Mandi, Bharatnatyam, Nautanki and Lavani, but not necessarily in the same order. Each of them has a different profession, viz- Banking, Acting, Business, Dancing, Anchoring, teaching and Writing, but not necessarily in the same order. P is an Anchor. S likes Lavani. The person who likes Bharatnatyam is doing a job of Acting. The person who does teaching is fond of Nati dance. U does not like Teaching, Acting, Banking or Dancing. U does not like Nautanki, Bihu or Mandi. Q doesn't have a profession of Business, Acting, Banking or Dancing. Q does not like Mandi, Mask dance, Bihu or Nautanki. R does not like Bharatnatyam and his profession is neither Banking nor Dancing. Neither $S$ nor $V$ does a job a Banking. $P$ does not like Bihu dance and mask dance. The person who does Business likes Nautanki.

## 36. Who among the following does a job of teaching?

1. Q
2. U
3. S
4. T
5. Can't say
6. Which of the following combinations is true according to the given information?
7. P- Mask dance- Anchoring
8. R- Nati- Teaching
9. T- Bihu- Writing
10. S- Lavani- Dancing
11. All the above
12. Which of the following is true about V?
13. Bharatnatyam - Acting
14. Lavani- Writing
15. Nati-Teaching
16. Nautanki-Business
17. Mask dance - writing
18. The person who has the profession of Banking, likes?
19. Mask dance
20. Bharatnatyam
21. Mandi
22. Lavani
23. Bihu
24. Who among the following likes a Nautanki?
25. $P$
26. R
27. T
28. V
29. Other than the given options

Directions (41-45): In each of the following questions below are given some statements
followed by some conclusions. You have to take the given statements to be true if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which one of the given conclusions logically definitely does not follow:

## 41. Statements:

All soils are stones.
Some stones are hills.
All mountains are not clouds.

## Conclusions:

I) Some soils being clouds is a possibility.
2) Some soils are hills is a possibility.
3) No stone is cloud.
4) All mountains being stones is a possibility.
5) No stone is a soil.

## 42. Statements:

Some waters are streams.
All streams are canals.
All canals are rivers,
Some streams are ponds.

## Conclusions:

I) All ponds are canals.
2) All canals are pond is a possibility
3) All streams are rivers.
4) All canals are waters is a possibility.
5) All streams are not canals.

## 43. Statements:

Some trees are forests.
Some forests are animals.
All herbivores are pets.
All animals are not herbivores.

## Conclusions:

| $A+B$ means | $A$ is the Father of $B$ |
| :--- | :--- |
| $A \times B$ means | $A$ is the Sister of $B$ |
| $A \$ B$ means | $A$ is the Wife of $B$ |
| $A$ \%B means | $A$ is the Mother of $B$ |
| $A \div B$ means | $A$ is the Son of $B$ |

46. What should come in place of the question mark, to establish that $J$ is the brother of $T$ in the expression = J $\div$ P \% H ? T \% L
a) $\times$
b) $\div$
c) $\$$
e) None of The Above
47. Which among the given expression indicate that $M$ is the daughter of $D$ :
a) $L+R \$ D \times M \times T$
b) $L \$ R \$ D+M \times T$
c) $L+R \$ D+M \times T$
d) None of The Above
the expression $\mathrm{I}+\mathrm{T} \% \mathrm{~J} \times \mathrm{L} \div \mathrm{K}$ is definitely true:
a) $L$ is the daughter of $T$
b) K is the son - in - law of I
c) $I$ is the grandmother of $L$
d) $J$ is the brother of $L$
e) None of The Above
48. Which among the following expressions is true, if $Y$ is the son of $X$ is definitely false:
a) $W \% L \times T \times Y \div X$
b) $W \$ X+L+Y+T$
c) $W \% X+T \times Y \div L$
d) None of The Above
49. What should come in place of the question mark, to establish that T is the sister - in - law of Q in the expression $=\mathrm{R} \% \mathrm{~T} \times \mathrm{P}$ ? $\mathrm{Q}+\mathrm{V}$
a) +
b) $\times$
c) $\$$
d) None of The Above
50. Which among the following options is true, if

Directions (51-55): Study the following information carefully and answer the questions given below:
The digits in the numbers are to be coded as follows:

| Digit | 3 | 9 | 5 | 8 | 1 | 7 | 0 | 4 | 6 | 2 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Code | M | O | Q | K | T | S | P | L | R | N |

Following conditions are to be observed:
(i) If the first digit is odd and the last digit is even, they are to be coded as $\Delta$ and $\delta$ respectively.
(ii) If the first digit is even and the last digit is odd, they are to be coded as $\$$ and $£$ respectively.
(iii) If 2 is preceded as well as followed by an odd digit, it is to be coded as a.
(iv) If 5 is preceded as well as followed by an even digit, it is to be coded as $\beta$.
(v) 0 is not considered as either even or odd.
51. What will be the code for $1692746 ?$
b) $\$$ SRQLPE
a) $\triangle \mathrm{ROaSL} \delta$
c) $\$ S R \beta L P £$
b) TROaSLR
d) $\$$ SP $\beta$ LRE
c) $\triangle \mathrm{RONSL} \delta$
e) None of these
d) $\triangle \mathrm{PO} \delta S L \delta$
e) None of these
52. \$MR $\beta$ LQS $£$ is the code for which of the following numbers?
$\begin{array}{ll}\text { a) } 23654579 & \text { b) } 85217324\end{array}$
b) 43654577
c) 23545679
d) Can't be determined
e) None of these
53. What will be the code for 3256789 ?
a) $\triangle \mathrm{NQRSK} \delta$
b) MaßRSKO
c) $M a Q R S K O$
d) $\mathrm{MN} \beta \mathrm{RSKO}$
e) None of these
54. What will be the code for $8765403 ?$
a) $K S R \beta L P M$
c) 81527324
55. KQTaSMNL is the code for which of the following numbers?
a) 85157324
d) 85127234
e) None of these
56. The sum of present ages of Ashok, Anil and Ajay is 75 years.If 5 years ago the ratio of their ages was $3: 4: 5$, What is the present age of Anil?

1. 20 years
2. 25 years
3. 30 years
4. 32 years
5. 35 years
6. The ratio of ages of Ajay and vijay at present is 3 :2:8 years earlier, the ratio was 5 : 3. What are their present ages?

$$
\text { 1. } 20 \text { years }
$$

2. 22 years
3. 28 years
4. 30 years
5. 32 years
6. One year ago the ratio between samir and Saurabh's age was 4:3 One year hence, the ratio of their ages will be $5: 4$. What is the sum of their present ages in years ?
7. 10 years
8. 16 years
9. 20 years
10. 25 years
11. 30 years
12. The average age of a man and his son is 48 years. The ratio of their age is $5: 3$ respectively .What is the son's age ?
13. 36 years
14. 40 years
15. 45 years
16. 50 years
17. 55 years
18. The ratio of ages of Namrata and Divya is $4: 3$ .The sum of their ages is $\mathbf{2 8}$ years. The ratio of their ages after 4 years will be :
19. $3: 4$
20. $5: 4$
21. $5: 6$
22. $6: 5$

## e) None of these

66. The central govt 's scheme for financial restructuring of debt of power distribution companies is named
a) SAVERA
b) UDAY
c) SHAKTI
d) ROSHNI
e) None of these
67. Which of the following is the least populated state in the country as per 2011 census?
a) Nagaland
b) Goa
c) Sikkim
d) Tripura
e) None of these
68. Which of the following became the first blindfriendly railway station in India recently?
a) Chennai, Tamil Nadu
b) New Delhi, Delhi
c) Kochi, Kerala
d) Mysuru, Karnataka
e) None of these
69. Jimmy Morales, a former TV comedian, won the recent presidential election in
a) Honduras
b) Belize
c) Guatemala
d) Nicaragua
e) None of these
70. Which of the following countries topped the World Bank's Ease of Doing Business List 2016?
a) China
b) US
c) Denmark
d) Singapore
e) None of these

## 71. Name the three districts of Uttrakhand in which liquor has been banned by Uttarakhand High Court

a. Uttarkashi, Rudraprayag, and Chamoli
b. Almora,Bageshwar and Chamoli
c. Dehradun, Haridwar and Nainital
d. Uttarkashi, Rudraprayag and Haridwar
e) None of these

## 72. Trump appoints former WWE CEO as Small Business Admin head, name the person

a. Vince McMahon
b. Shane McMahon
c. Linda McMahon
d. Paul Michael Levesque
e) None of these

## 73. Name the city that made the public transport free to tackle air pollution

a. London
b. Paris
c. New York
d. Sydney
e) None of these

## 74. Name the food safety regulator of India

a. Food Safety and Standards Authority of India
b. Food Safety Authority of India
c. Food Security and Standards Authority of India
d. Food Safety and Security Authority of India
e) None of these
75. Recently, India removed import duty on a food crop, name it :
a. Rice
b. Soya
c. Millet
d. Wheat
e) None of these
76. The new Taxation Laws (2nd Amendment) Bill 2016, will entail a tax of 30 per cent of the income declared, an additional surcharge of 33 percent of the tax amount, and a penalty of
a. $30 \%$
b. $15 \%$
c. $20 \%$
d. $10 \%$
e) None of these
77. "A son has no legal right to live in the selfacquired house of his parent" which high court stated this line?
a. Madhya Pradesh High Court
b. Mumbai High Court
c. Delhi High Court
d. Gujarat High Court
e) None of these
78. Who among the following won the Infosys Prize in Mathematics 2016?
a. Kaneenika Sinha
b. Akshay Venkatesh
c. Manjul Bhargava
d. Govind Rangrajan
e) None of these
79. Who among the following Indian-American women is appointed to serve as Administrator of the Centers for Medicare and Medicaid Services by Donald Trump?
a. Rachel Roy
b. Kavita Ramdas,
c. Seema Verma
d. Jhumpa Lahiri
e) None of these
80. Whose 158th birthday was commemorated by Google Doodle for his contribution radio in communication and who was the first to use a semiconductor to detect radio waves?
a. Vikaram Sarabhai
b. Jagdish Chandra Bose
c. Meghnad Saha
d. Birbal Sahni
e) None of these
81. A semiconductor device can perform the function of $a(n)$
a) vacuum tube
b) Super conductor
c) insulator
d) All the above
e) None of these
82.The major endocrine gland which is situated in the brain is
a) pituitary gland
b) thyroid gland
c) pancreas
d) testes
e) None of these
83.. The alteration of the composition or structure of a rock by heat, pressure, or other natural agents is called
a) sedimentation
b) metamorphism
c) solidification
d) crystallization
e) None of these

## 84. Which of the following is commonly known as blood cancer?

a) Leukaemia
b) Leukoderma
c) Rosacea
d) Psoriasis
e) None of these
85. Iron rusts faster in which of the following?
a) Salt water
b) Distilled water
c) River water
d) Rain water
e) None of these

## 86. Rusting of iron requires

a) Oxygen only
b) Water only
c) Carbon dioxide only
d) Oxygen and water
e) None of these
87. Which of the following plant species is adapted to shade or low-light intensities?
a) Sciophytes
b) Xerophytes
c) Heliophytes
d) Epiphyte
e) None of these
88. The recently released film 'The Man Who Knew Infinity' is based on the life of
a) Srinivasa Ramanujan
b) Aryabhata
c) CV Raman
d) Vashishtha Narayan Singh
e) None of these
89. The unit of measurement of the strength of a magnetic field is
a) Joule
b) Tesla
c) Henry
d) Newton meter
e) None of these
90. As per rules, the prescribed highest limits of noise levels for residential localities during the day and the night respectively are
a) 65 and 55 decibels
b) 75 and 70 decibels
c) 50 and 40 decibels
d) 55 and 45 decibels

## General Science

91. In which of the following the velocity of light is the highest?
(A) Water
(B) Wood
(C) Vacuum
(D) Glass
(E) None of these
92. On which principle hydrogen bomb works?
(A) Nuclear fission
(B) Nuclear fusion
(C) Electromagnetic effect
(D) Photoelectric effect
(E) None of these
93. Whose ore is cinnabar?
(A) Mercury
(B) Gold
(C) Silver
(D) Iron
(E) None of these
94. Which is called as the brain of the computer?
(A) Scanner
(B) CPU
(C) Modem
(D) Monitor
(E) None of these

## 95. Where RBCs are formed?

(A) Kidney
(B) Liver
(C) Spleen
(D) Bone marrow
(E) None of these
96. How many litres are there in a barrel?
(A) 159
(B) 151
(C) 100
(D) 101
(E) None of these
97. Who used the term 'cell' for the first time?
(A) Robert Brown
(B) Robert Hooke
(C) Schleiden
(D) Schwann
(E) None of these
98. Echo is caused due to $\qquad$
(A) High speed of sound
(B) High speed of light
(C) Reflection of sound
(D) Refraction of sound
(E) None of these
99. Where is Forest Survey of India located?
(A) Kolkata
(B) Guwahati
(C) Lucknow
(D) Dehradun
(E) None of these
100. Who invented electric battery?
(A) Faraday
(B) Ostrad
(C) Newton
(D) Volta
(E) None of these
101. Which of the following organ of human body has the highest number of bones?
(A) Vertebrae
(B) Fingers
(C) Brain
(D) Mouth
(E) None of these
102. Air bubble in water works as.
(A) Concave lens
(B) Convex lens
(C) Convexo convex lens
(D) None of these
(E) None of these
103. What is the percentage of gold in 18 carat gold?
(A) $82 \%$
(B) $75 \%$
(C) $80 \%$
(D) $90 \%$
(E) None of these
104. Which one of the following is the largest mammal?
(A) Giraffe
(B) Elephant
(C) Blue Whale
(D) Rhinoceros
(E) None of these
105. Rayon fibre is made up of
(A) Cellulose
(B) Petroleum
(C) Paper
(D) Polythene
(E) None of these
106. Which part of the camera works similar to that of the retina of human's eye?
(A) Lens
(B) Film
(C) Shutter
(D) None of these
(E) None of these
107. What is the normal blood pressure of human?
(A) $90 / 120 \mathrm{~mm}$ of Hg
(B) $90 / 140 \mathrm{~mm}$ of Hg
(C) $100 / 140 \mathrm{~mm}$ of Hg
(D) $80 / 120 \mathrm{~mm}$ of Hg
(E) None of these
108. Which type of radiation is absorbed by the upper layer of the atmosphere?
(A) Radio waves
(B) Ultraviolet
(C) Infrared
(D) Visible
(E) None of these
109. Where is Indira Gandhi Atomic Research

## Center located?

(A) Sriharikota
(B) Mumbai
(C) Thiruvananthapuram
(D) Kalpakkam
(E) None of these
110. Which of the following disease is caused by Virus?
(A) Hepatitis
(B) Tuberculosis
(C) Typhoid
(D) Cholera
(E) None of these
111. A fuse wire should have following characteristics -----
(A) Low melting point, high resistance
(B) High melting point, low resistance
(C) Low melting point, low resistance
(D) High melting point, high resistance
(E) None of these

## 112. Which of the following are decomposers?

(A) Animals
(B) Birds
(C) Bacteria and Fungi
(D) Soil and water
(E) None of these
113. Which type of coal is used to produce thermal electricity?
(A) Bituminous
(B) Anthracite
(C) Lignite
(D) Peat
(E) None of these
114. Which of the following is the substitute for wool?
(A) PVC
(B) Mercerized cotton
(C) Polythene
(D) Nylon 6, 6
(E) None of these
115. Which of the following element is essential for the formation and growth of bones and cartilages?
(A) Zinc
(B) Silicon
(C) Magnesium
(D) Calcium
(E) None of these
116. Generally the wire of the electric fuse is made up of $\qquad$ _.
(A) Nickel
(B) Glass
(C) Tin

## Answer :

(1-5):

| Male | Female |
| :--- | :--- |
| Drama $=\frac{1 \times 160}{8}=20$ | Drama $=\frac{25 \times 240}{100}=60$ |
| Dance $=105 \times \frac{3}{7}=45$ | Dance $=\frac{40 \times 240}{100}=96$ |
| Skit $=105 \times \frac{4}{7} \times 60$ | Skit $=\frac{4}{7} \times 84=48$ |
| Singing $=\frac{25 \times 140}{100}=35$ | Singing $=\frac{3}{7} \times 84=36$ |

1. 3;

Required answer $=60+48=108$

## 2. 2;

Required difference $=60-36=24$

## 3. 5;

Required ratio $=36: 45=4: 5$

## 4. 1;

Required answer $=(20+45)+(60+96)$
$=65+156=221$

## 5. 4;

Required ratio $=35: 48$
6. 3; The series is


Hence, there should be 893 in place of 890.
9. 3; The series is


Hence, there should be 888 in place of 896
10. 1; The series is


Hence, there should be 888 in place of 896
7. 5 ; The series is

Hence, there should be 13179 in place of 13289

hence, there should be 777555 in place of 77555


## 8. 1 ; The series is

$$
C P=\frac{100}{120}=\frac{10}{12}
$$

11. 5;

Since he purchases 120 gm and pays Rs. 100 by assuming actual CP of $1 \mathrm{gm}=$ Rs. 1)
$\therefore \mathrm{SP}=\frac{135}{90}=\frac{3}{2}=\frac{18}{12}$
$\therefore$ Profit percentage $=$
$\frac{\frac{18}{12}-\frac{10}{12}}{\frac{10}{12}} \times 100=80 \%$
12. 1;

|  | Black shoes | Brown shoes |  |
| :---: | :---: | :--- | :--- |
| Price | 3 | $:$ | 1 |
| Number of pairs | 4 | $:$ | x |
| Total | 12 | $:$ | x |

Let the speed of boat be $\times \mathrm{km} / \mathrm{hr}$
Total price in original bill $=$ rs. $(12+x)$
In wrong bill = Rs. ( $3 x+4$ )
Bill increased by $40 \%=2 / 5$

$$
\therefore 5\left(\frac{3 x+4}{7}\right)=12+\mathrm{x}
$$

$\Rightarrow 15 x+20=84+7 x$
$\Rightarrow 8 x=64$
$\Rightarrow x=8$ pairs
$\therefore$ Total pairs $=8+4=12$ pairs
13. 4;

SI for 10 years on $416=$

$$
=\frac{416 \times 10 \times 8}{100}=332.8
$$

Let the principal for Cl be $\mathrm{Rs}, \mathrm{P}$

$$
\begin{aligned}
& \Rightarrow \mathrm{CI}=\mathrm{P}\left(1+\frac{8}{100}\right)^{2}-\mathrm{P} \\
& \Rightarrow 332.8=\mathrm{P}\left[\left(\frac{27}{25}\right)^{2}-1\right]
\end{aligned}
$$

$\therefore \mathrm{P}=\frac{332.8 \times 625}{104}=$ Rs. 2000

## 14. 2;

## 16. 1;

Part filled by A from 8 am to 11 am

$$
=\frac{3}{15}=\frac{1}{5}
$$

Part filled by B from 9 am to 11 am

$$
=\frac{2}{12}=\frac{1}{6}
$$

Total part filled till 11 am

$$
=\frac{1}{5}+\frac{1}{6}=\frac{11}{30}
$$

At 11 am pipe $C$ is opened to empty it
$\therefore$ Part of thank emptied in 1 hr

$$
=\frac{1}{4}-\frac{1}{15}-\frac{1}{12}=\frac{1}{10}
$$

$\therefore 11 / 30$ part will be
emptied in

$$
=\frac{11}{30} \times 10=\frac{11}{3} \mathrm{hrs}=3 \text { hours } 40 \mathrm{~min}
$$

.e. at 2:40 pm

## 17. 4;

Let the width of the path be $\times \mathrm{km}$
$\therefore$ Area of the path
$=38 \times 32-(38-2 x)(32-2 x)$
$=1216-1216+140 x-4 x^{2}$
$=140 x-4 x^{2}$
$\therefore 140 x-4 x^{2}=600$
$\Rightarrow 4 x^{2}-140 x+600=0$
$\Rightarrow x^{2}-35 x+150=0$
$\Rightarrow x(x-30)-5(x-30)=0$
$\Rightarrow(x-5)(x-30)=0$
$\therefore \mathrm{x}=5$ as $\mathrm{x} \neq 30$
18.

Along with stream $=$ Down Stream $=6+2=8 \mathrm{kmph}$

Time taken $=80 / 8=10 \mathrm{kmph}$

## 19.

$==>.8(x+4)=12(x-4)$
$==>8 x+32=12 x-48$
$==>X=80 / 4=20 \mathrm{kmph}$

## 20.

Speed of Downstream $=15+3=18 \mathrm{kmph}$
Speed of Upstream = 15-3 = 12 kmph
$==>X / 12-X / 18=3$
$==>X=36 \times 3$
$==>X=108 \mathrm{~km}$
21.
$90-60=50$
$30 \times(5 / 18)=25 / 3 \mathrm{~m} / \mathrm{s}$
Distance covered in $20 \mathrm{sec}=24 \times(25 / 3)=200$
Length of each train $=200 / 2=100$
22.

1st Bottle Contains $80 \%$ of milk and $20 \%$ water 2nd Bottle Contains 70\% of milk and $30 \%$ water Milk ratio $=80: 70=8: 7$

## 23.

Let original price $=$ Rs. 100
$30 \%$ discount $=$ Rs. 30
$C P=70$
$S P=(150 / 100) \times 70=105$
Percentage $=(105-100) \%=5 \%$
24.
==> 1 - no boy is selected
$==>1-6 c 4 / 11 c 4=21 / 22$
25.
$10+15+10=35 \%$
$100-35=65 \%=26,000$
65\% ------- 26,000

100\% ------ ?
Salary $=40,000$
26.

A: $B=2: 3$
$==>15,000: B=2: 3$
$==>B=22,500$
27.

5 units ----- 70
3 units ----- 42
Milk $=42$ water $=28$
$==>42 /(28+x)=2 / 3$
$==>X=35$
28.

Width $=40 * 100 / 100-40$
$==>4000 / 60=66.66 \%$
29. From 1 to 12, the clock would continue to strike and then start from 1 to 12 in the same manner.
. . Sum of the number of strikes the clock makes from
1 to 12 [i.e. $1+2+3+4+$ $\qquad$ $+12]$
$=12 / 2\{2 \times 1+12-1) 1\}$
$\{$ Sum of A.P. $=n / 2[2 a+n-1) 1\}$
$=6(13)=78$
. . Required number $=2 \times 78=156$.
30. From 1 to 12, the clock would continue to strike and then start from 1 to 12 in the same manner.
. . Sum of the number of strikes the clock makes from
1 to 12 [i.e. $1+2+3+4+$ $\qquad$ .+ 12]
$=12 / 2\{2 \times 1+12-1) 1\}$
$\{$ Sum of A.P. $=n / 2[2 a+n-1) 1\}$
$=6(13)=78$
. . Required number $=2 \times 78=156 .$.

## The Economic Times


31. The Herald
32. B- The Herald
33. A, C, D
34. None
35. Three
(36-40)

| Person | Dance form | Profession |
| :---: | :---: | :---: |
| P | Mandi | Anchoring |
| Q | Nati | Teaching |
| R | Nautanki | Business |
| S | Lavani | Dancing |
| T | Bihu | Banking |
| U | Mask dance | Writing |
| V | Bharatnatyam | Acting |

36. 1
37.4
38.1
39.5
37. 2
38. There is no definite relation between soil and cloud. But the possibility in 1) exists. Hence conclusion I) conclusion 1) follow.
Again, All soil are stones (A) + some stones are hills (I) $=A+I=$ No conclusion. But the possibility in 2 ) exists and the possibility between mountains and stone also exists. Hence conclusion 4) follows Now, All mountains are not clouds ( O ) some mountains are not clouds ( O ). So, we can't say no stone is cloud.
Hence 3) may follows. Again, All
soils are stone (A) - conversion some stones are soils (I). Hence 5) does not follow.
39. Some streams are pounds (I) conversion Some pounds are streams $(\mathrm{I})+$ All streams are canals $(\mathrm{A})=$ I+A Some pounds are canals. Thus conclusion I) may follows and possibility in 2) exist. Hence But the conclusion 1) and 2) follow.
Again, All streams are canals $(A)+$ All canals are rivers (A) $=A+A=A=$ All stream are rivers (A). Hence 3) follows. Now, Some waters are streams (I) + All streams are canals (A) = I $+\mathrm{A}=\mathrm{I}=$ Some waters are canals (I). Thus, possibility in 4) exists. Hence 4) follows. From statements second conclusion 5) does not follow.
40. 2; From statements first and second.

Some trees are forest (I)+ Some forests are animals ( 1 )=I+I = No conclusion. But 1) may follows and possibility in 3) exists. Hence conclusion 1) and 3) follow. Again, all herbivores are pets (A) - conversion - Some pets are herbivores (I). Hence conclusion 2) does not follow. From statements second possibility in 5) exist. Hence 5) follows. And possibility in 4) also
follows.
44.1; Some metroes are Smart (I)+ All smart are electronic vans (A)=I+A=I= Some metroes are electronic vans (I). Hence conclusion 2) follows. But from statement four conclusion 2) follows. But from statement four conclusion 1) does not follow. There is no negative statements. So possibility in 3 ) and 4) exist. Hence conclusion 3) and 4) follow.
Again, conclusion 5) follows from statement first.
45.5; All apples are oranges (A)-conversion - some oranges are apples (I)+ All apples are not papayas (O)conversion - some apples are not papayas ( O )=1+O= No conclusion.
So, the possibilities in 1) and 3)exist. And conclusion 2) and 4) may follow.

Again, conclusion 5) does not follow from statement four.
46. (Option A)

47. (Option C)

48. (Option B)

49. (Option B)

50. (Option C)

51. a; Conditions (i) and (iii) apply
52. d; There are numerous possibilities.
53. b; Conditions (iii) and (iv) apply
54. c; Conditions (ii) and (iv) apply
55. e: 85127324
56. Let 5 years age, the age of ashok, Anil and Ajay were $3 x, 4 x$ and $5 x$ years. Then, their present ages are $(3 x+5),(4 x+5)$ abd $(5 x+5)$ years.
Now, $3 x+5+4 x+5+5 x+5=75$ => $12 x=60 \quad x=$ 5
Hence, present age of Anil $=4 x+5=4 \times 5+5=25$ years.
57. Let the present ages of Ajay and Vijay are $3 x$ years and $2 x$ years respectively ; then

$$
\begin{aligned}
& \frac{3 x-8}{2 x-8}=\frac{5}{3} \Rightarrow 9 x-24=10 x-40 \therefore x=16 \\
& \text { a y years and } 2 x=2 \times 16=32 \text { years }
\end{aligned}
$$ So, their Present ages are 48 years ard 32 years.

58. Let one year ago ages of Samir and Saurabh was $4 x$ and $3 x$ years respectively; then

$$
\frac{4 x+2}{3 x+2}=\frac{5}{4} \Rightarrow 16 x+8=15 x+10
$$

$$
\begin{aligned}
& \therefore \therefore \quad x=2 \\
& \text { Hence, Sum of their present ages }=4 x+1+3 x+1 \\
&=7 x+2=7 \times 2+2=16 \text { years. }
\end{aligned}
$$

59. Sum of ages of man and his son $=2 \times 48=96$

Let the ages of man and his son be $5 x$ and $3 x$ years; then
60. Let the present ages of Namrata and Divya are $4 x$ and $3 x$ years respectively;then $4 x+3 x=28$
Hence, their present ages are 16 and 12 years.
so, required ratio $=(16+4):(12+4)=20: 16=5: 4$

1. (D) Generally the wire of the electric fuse is made up of alloy of tin and glass.
2. b) Naypyidaw
3. a) 0.5 per cent
4. c) Himachal Pradesh
5. a) Liberia
6. b) Payments Banks
7. b) UDAY
8. c) Sikkim
9. d) Mysuru, Karnataka
10. c) Guatemala
11. d) Singapore
12. a
13. c
14. b
15. a
16. d
17. d
18. c
19. b
20. c
21. b
22. a) vacuum tube
23. (A) Dry cell is a type of primary cell.
24. (C) Photosynthesis takes place in chloroplast.
25. (A) Star fish is an echinoderm.
26. (C) Lead in pencil is made up of graphite.
27. a) pituitary gland
28. b) metamorphism
29. a) Leukaemia
30. a) Salt water
31. d) Oxygen and water
32. a) Sciophytes
33. b) Aryabhata
34. b) Tesla
35. d) 55 and 45 decibels
36. (C) In vacuum speed of light is the highest.
37. (B) Hydrogen bomb works on the principle of nuclear fusion.
38. (A) Cinnabar (HgS) is the ore of mercury.
39. (B) CPU is called as the brain of the computer.
40. (D) RBCs are formed in bone marrow.
41. (A) One barrel $=159$ litres
42. (B) Robert Hooke coined the term 'cell'.
43. (C) Echo is caused due to the reflection of sound.
44. (D) Forest Survey of India is located at Dehradun.
45. (D) Volta invented electric battery.
46. (A) Vertebrae has 39 bones; highest in the human body.
47. (A) Air bubble in water works as concave lens.
48. (B) Pure gold is of 24 carat; $\%$ of gold in 18 carat gold is 75 .
49. (C) Blue Whale is the largest mammal.
50. (A) Rayon fibre is made up of cellulose.
51. (B) Film of the camera works similar to that of the retina of human's eye.
52. (D) Normal blood pressure of human is $80 / 120$
mm of Hg .
53. (C) Infrared radiation is absorbed by the upper
layer of the atmosphere.
54. (D) Indira Gandhi Atomic Research Center is
located at Kalpakkam.
55. (A) Hepatitis is a viral disease.
56. (A) A fuse wire should have low melting point, high resistance.
57. (C) Bacteria and fungi are categorized as
decomposers.
58. (B) Anthracite coal is used in the production of thermal electricity.
59. (D) Nylon 6, 6 is the substitute for wool
60. (D) Calcium is essential for the formation and growth of bones and cartilages.
61. (D) Generally the wire of the electric fuse is made up of alloy of tin and glass.
62. (A) Dry cell is a type of primary cell.
63. (C) Photosynthesis takes place in chloroplast.
64. (A) Star fish is an echinoderm.
65. (C) Lead in pencil is made up of graphite.
