Quantitative Aptitude

1) If 6 (P’s capital) = 8(Q’s capital) = 12(R’s capital), out of a gain Rs.3645 R will receive
   a) Rs.610
   b) Rs.710
   c) Rs.810
   d) Rs.910
   e) None of these

2) A vendor has 18 kg of vegetables. He sells a part of these at a gain 15% and the balance at a loss of 3%. If on the whole he earns a profit of 10%, the amount of vegetables sold at a loss is.
   a) 3 kg
   b) 5 kg
   c) 7 kg
   d) 9 kg
   e) None of these

3) The ratio of the age of krishna to that of Prakash is 3:4. If krishna is six years younger than Prakash, what will be the ratio of the ages of krishna and Prakash after six years?
   a) 3:2
   b) 5:4
   c) 2:3
   d) 4:5
   e) None of these

4) The average temperature on Sunday, Monday and Tuesday was 44°. The average temperature on Monday, Tuesday and Wednesday was 42°. If the temperature on Wednesday was 48°, what was the temperature on Sunday?
   a) 54°
   b) 48°
   c) 42°

5) A certain box contains 7 red, 6 pink and 5 green tiles. 4 tiles are drawn at random. What is the probability that they are not of the same colour?
   a) 11/612
   b) 59/612
   c) 55/612
   d) 601/612
   e) None of these

6) A cylindrical bar of tin whose height is 4 times of its radius is melted and cast into spherical globe each of ¼ of the radius of the cylinder. Find number of spherical globes.
   a) 162
   b) 172
   c) 182
   d) 192
   e) None of these

7) Three vessels have capacity of 350ml, 500ml and 150ml. 750ml of water is poured into them so that the same fraction of each is filled. The volume filled in the largest beaker will be:
   a) 375 ml
   b) 250 ml
   c) 425 ml
   d) 165 ml
   e) None of these

8) A certain national bank offers 25% interest rate compounded annually. Selvi deposits Rs. 35000 every year in her account. If she does not withdraw any amount, approximately how much balance will be in her account after four year?
   a) Rs 225245
9) A sum of cash invested for a certain number of years at 32% p.a. simple interest, grows to Rs.720. The same sum of cash invested for the same number of years at 16% p.a. simple interest grows to Rs.480 only. For how many years was the sum invested?
   a) 7.3 years  
   b) 5 years    
   c) 6.25 years  
   d) 8 years  
   e) None of these

10) The circumference of a circle is one-third of the perimeter of a rectangle. The area of the circle is 616 sq. m. What is the area of the rectangle if the breadth of the rectangle is 60 m?
   a) 5348 Sq m  
   b) 4860 Sq m  
   c) 4320 Sq m  
   d) 3136 Sq m  
   e) None of these

Direction: (11 - 15): Study the following Graph carefully to answer the given questions.

The graph shows income of three companies in different years (in cr).

11) What is the % increase in the income of Company Stan venture from 2012 to 2014?
   a) 14 (1/2)%  
   b) 33 (1/3)%  
   c) 50%  
   d) 45 (1/5)%  
   e) None of these

12) The total income of all three companies together was minimum in which of the following years?
   a) 2016  
   b) 2013  
   c) 2011  
   d) 2014  
   e) None of these
13) In which year was the % increase in the income of Company Maximum from the previous year maximum?
   a) 2013
   b) 2016
   c) 2011
   d) 2012
   e) None of these

14) What is the ratio of total income of all three companies in 2011 to that in 2012?
   a) 4: 5
   b) 5: 3
   c) 3: 5
   d) 4: 7
   e) None of these

Direction (16 - 20): Study the following information to answer the given questions.

<table>
<thead>
<tr>
<th>Dept</th>
<th>Total</th>
<th>M:F</th>
<th>Total</th>
<th>M:F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATHS</td>
<td>120</td>
<td>13:11</td>
<td>1800</td>
<td>7:11</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>80</td>
<td>9:7</td>
<td>1500</td>
<td>7:8</td>
</tr>
<tr>
<td>HINDI</td>
<td>150</td>
<td>17:13</td>
<td>2200</td>
<td>9:13</td>
</tr>
<tr>
<td>IT</td>
<td>90</td>
<td>4:5</td>
<td>600</td>
<td>7:5</td>
</tr>
<tr>
<td>ARTS</td>
<td>140</td>
<td>4:3</td>
<td>1600</td>
<td>17:15</td>
</tr>
<tr>
<td>COMPUTER</td>
<td>70</td>
<td>18:17</td>
<td>1200</td>
<td>9:11</td>
</tr>
</tbody>
</table>

16) What is the ratio of total number of students in HINDI and IT to the total no of staff in MATHS and SCIENCE?
   a) 10:1
   b) 14:1
   c) 2:11
   d) 1:64
   e) None of these

17) The total no of male staff in IT and COMPUTER is what % of the total number of staff in these 2 departments?
   a) 24.5%
   b) 25.7%
   c) 47.5%
   d) 50.00%
   e) None of these

18) Total no of female students in HINDI is what % more than the male students in the same Department?
   a) 44.44%
   b) 46.76%
   c) 50.75%
   d) 75.66%
   e) None of these

19) Find the number of female students in ARTS department
   a) 125
   b) 650
   c) 248
   d) 350
   e) None of these

20) The total no of male staff in SCIENCE is what % of the total number of female staff in SCIENCE?
   a) 50%
   b) 67.22%
   c) 75.22%
   d) 80.50%
   e) None of these

15) The income of Company Maxis in 2014 is what % of income of Company Stan venture in 2015?
   a) 83.33%
   b) 89%
   c) 78%
   d) 90%
   e) None of these
d) 750  e) None of these

20) Find the total no of staff in all the department together
   a) 630  b) 650  c) 320  d) 540  e) None of these

Direction (21 - 25): Study the following information to answer the given questions
The bar graph shows the profit percentage of two companies in different years

Profit percentage = (I – E) * 100 / E

21) Expenditure of P in 2005 and 2006 are Rs. 12lak and Rs.14lak. What was the total income of P in 2005 and 2006 together?
   a) Rs.25.8L  b) Rs.40.4L  c) Rs.34L  d) Rs.55.4L  e) None of these

22) Ratio of Expenditure of Companies P and Q in 2004 was 4: 5. What was the ratio of their incomes in the same year?
   a) 58:75  b) 25:58  c) 46:55  d) 69:55  e) None of these

23) What was the total income of the company in all the years?
   a) Rs.182L  b) Rs.511L  c) Rs.270L  d) Cannot be determined

24) a) 58:75  b) 25:58  c) 46:55  d) 69:55  e) None of these

25) a) Rs.182L  b) Rs.511L  c) Rs.270L  d) Cannot be determined
24) If the incomes of the Q in 2003 and 2004 were in the ratio 3: 4, what is the ratio of expenditure of company Q in 2 years?
   a) 25: 55  
   b) 42: 26  
   c) 44: 45  
   d) 45: 58  
   e) None of these

25) If the expenditure of P and Q in 2002 was equal and total income of P and Q was Rs. 116L, what was the total expenditure of P and Q in the 2002?
   a) Rs.54L  
   b) Rs.63L  
   c) Rs.80L  
   d) Rs.55L  
   e) None of these

Directions (26 - 30): In the following questions, two equations I and II are given. You have to solve both the equations and give Answer as,
   a) p > q  
   b) p < q  
   c) p ≥ q  
   d) p ≤ q  
   e) p = q or relationship cannot be established

26) I. 4p² + 8p + 3 = 0  
   II. 4q² – 29q + 45 = 0

27) I. 2p² – 23p + 21 = 0  
   II. q² + 42q + 272 = 0

28) I. 5p² – 26p + 21 = 0  
   II. 2q² – 17q + 21 = 0

29) I. p² – 21p + 104 = 0  
   II. q³ – 33q + 260 = 0

30) I. p² – 31p + 240 = 0  

II. q² – 28q + 195 = 0

Direction (31 - 35): what should come in the place of (?) in the following questions?

31) (1678 – 1455 + 1132) x 4 =?
   a) 5640  
   b) 5420  
   c) 5860  
   d) 4850  
   e) 4650

32) (12841 + 11411 + 13211 - 15148 – 16411)=?
   a) 5904  
   b) 9054  
   c) 4514  
   d) 1584  
   e) 1485

33) (24 x 18) + 1653 – 1345 =?
   a) 740  
   b) 790  
   c) 780  
   d) 680  
   e) 690

34) (134 x 114) – 1234 – 186 = ?
   a) 14568  
   b) 13856  
   c) 12548  
   d) 12486  
   e) None

35) (3333.33 + 121.11 + 333.33 + 33.33 + 3.3 – 111.11 – 11.11)÷2=?
   a) 1551.07  
   b) 1456.89  
   c) 1851.09  
   d) 2041.09  
   e) 2351.09
Directions (36 - 40): What will come in place of question mark in the following number series?

36) 130, 133, 139, 148, 160, ?
   a) 175  
   b) 186  
   c) 481  
   d) 124  
   e) 234

37) 128, 64, 64, 96, 192, ?
   a) 450  
   b) 128  
   c) 480  
   d) 124  
   e) 230

38) 17, 22, 29, 38, 49, ?
   a) 62  
   b) 54  
   c) 24  
   d) 58  
   e) 47

39) 160, 176, 192, 208, ?, 240
   a) 450  
   b) 229  
   c) 224  
   d) 845  
   e) None

40) 10, 15, 25, 45, 85, ?
   a) 118  
   b) 145  
   c) 158  
   d) 165  
   e) None

Directions (41-42): What will come in place of question mark in the following alphabetical order from right to left, then how many letters remain in the same position?

41) If all the letters in the word “INTERVENTIONS” are arranged in alphabetical order from right to left, then how many letters remain in the same position?
   a) None  
   b) One  
   c) Two  
   d) Three  
   e) Four

42) In a row Ram is 17th from the left end and Raj is 15th from the right end, if they interchange their positions Raj will be in 25th position from the right end, and then find the total number of persons in the row?
   a) 40  
   b) 41  
   c) 42  
   d) 43  
   e) None of these

Directions (43-47): Study the following information carefully and answer the questions given below.

There are eight persons sitting in a circular table and are not facing centre. They are M, N, O, P, Q, R, S, and T and each one likes different stationary items i.e. Pencil, Pen, Pad, Book, Note, Eraser, Scale, and Ink and are not necessarily in the same order.

P sits second to the right of the one who likes Pen. The one who likes Book and the one who likes Ink are immediate neighbours. R is an immediate neighbour of N, who likes Pen. S and T are sitting opposite to each other. T is not an immediate neighbour of N and likes Scale. The one who likes Book and the one who likes Ink are immediate neighbours (repeat). The one who likes pencil sits third to the left of Q. Only one Person sits between T and the one who likes Ink. Q is an immediate neighbour of neither S nor T. M does not like Pad. O likes Note and is not an immediate neighbour of T. Neither M nor S likes Eraser.
43) Who among the following persons is an immediate neighbour of the one who likes Note?
   a) S, N
   b) Q, M
   c) S, The one who likes Ink
   d) N, The one who likes Pad
   e) None of these

44) Who sits third to the right of the one who sits second to the right of P?
   a) S
   b) O
   c) Q
   d) N
   e) None of these

45) Which of the following item is liked by the person M?
   a) Scale
   b) Book
   c) Ink
   d) Pencil
   e) None of these

46) Who sits opposite to the one who likes Eraser?
   a) P
   b) T
   c) M
   d) Q
   e) None of these

47) Which of the following combination is true?
   a) N- pencil
   b) P-Book
   c) T-Ink
   d) O-Pen
   e) None of these

Direction (48-52): Read all the statements and then decides which of the given conclusions logically follows from the given statements disregarding commonly known facts.

48) Statements:
   Some Lilly are Jasmine
   All Jasmines are Lotus
   All Lotuses are Sunflowers
   No Sunflower is a Primrose
   Conclusions:
   I. Some Lilly are not Primrose
   II. No Jasmine is a Primrose is a possibility

49) Statements:
   All Books are Notes
   Some Notes are Pens
   No pen is a Erasers
   Some Erasers are Pencil
   Conclusions:
   I. Some Pens are Books
   II. No Pen is pencil is a Possibility

50) Statements:
   All F1 are F5
   Some F5 are F7
   No F7 is F9
   All F9 are F3
   Conclusions:
   I. All F7 are F3 is a Possibility
   II. Some F5 are not F9

51) Statements:
   All Sony are Samsung
   No Samsung is Honor
   All Honors are Lava
   Some Lava are Oppo
   Conclusions:
I. Some Oppo are not Sony
II. No Lava is Samsung

52) Statements:
Some Boosts are Horlicks
All Horlicks are Milk
No Milk is Complan
Some Complan are Tea

Conclusions:
I. No Complan is Boost
II. Some Boosts are Complan

Directions (53-57): Study the following information carefully and answer the questions given below.

In a certain code,
“Technological and financial challenges remain” is written as “ghi xyz wvu zyx kji”
“Banks monitor financial challenges” is written as “zyx wvu rst pon “
“Rbi banks screening technological challenges” is written as “lkj zyx rst ghi def”
“Banks and Rbi monitor policies” is written as “mlk lkg xyz rst pon”

53) What is the code for “Screening” in this code language?
   a) xyz
   b) rst
   c) def
   d) lkj
   e) None of these

54) What is the code for “Monitor” in this code language?
   a) ghi
   b) kji
   c) rst
   d) pon
   e) None of these

55) Which of the following word represents the code “kji” in this code language?
   a) Remain
   b) Challenges
   c) Technological
   d) And
   e) None of these

56) Which of the following word represents the code “mlk” in this code language?
   a) Monitor
   b) Banks
   c) Rbi
   d) Policies
   e) None of these

57) What may be the code for “Financial Inclusion” in this code language?
   a) wvu zyx
   b) kji zyx
   c) pon mlk
   d) ghi wvu
   e) None of these

Directions (58-62): Study the following information carefully and answer the questions given below.

Eight persons P, Q, R, S, T, U, V, and W are sitting in a row and all of them are facing north. Each one of them has a seminar on different dates in a month i.e. 12, 14, 16, 18, 20, 22, 24, and 26 but not necessarily in the same order.

Q sits at one of the extreme ends. R attends the seminar date neither on 20 nor on 22. T sits fourth to the left of U and is an immediate neighbour of R. There are two persons sit between Q and P, whose seminar date is 24th. The one whose seminar date is 26th sits second to the right of V. P is not an neighbour of R and U. There are two persons sit between the one whose seminar date is 16th and the one whose seminar date is 18th, who sits second from the right end. S sits second to the left of the...
one whose seminar date is 12th and is an immediate neighbour of U. W does not attend the seminar on 22nd and is not a neighbour of P. R does not attend the seminar on 16th.

58) Who among the following persons sit at extreme ends?
   a) Q, R
   b) T, W
   c) W, Q
   d) U, Q
   e) None of these

59) Who sits third to the left of the one whose seminar date is 18th?
   a) T
   b) P
   c) Q
   d) S
   e) None of these

60) How many members sit between T and P?
   a) None
   b) One
   c) Two
   d) Three
   e) None of these

61) Who is an immediate neighbour of P?
   a) V
   b) S
   c) Q
   d) Both (a) and (b)
   e) None of these

62) Which of the following combination is true?
   a) T – 16th
   b) P - 22nd
   c) S – 24th
   d) V – 16th
   e) None of these

Directions (63-67): In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.

63) Statements
   A < B = C ≥ D, F > G = K, B < E ≥ F < I
   Conclusions
   I. A < I
   II. K < I

64) Statements
   J ≤ H > I = K, N = F < O > P, L > M ≥ N > H
   Conclusions
   I. J < O
   II. F > K

65) Statements
   M > N < O = P ≥ Q, R < U = K ≥ L, O < S ≤ R > T
   Conclusions
   I. Q < K
   II. K < T

66) Statements
   X < Y ≤ Z = A ≥ B, E > Z < C ≥ D
   Conclusions
   I. C < X
   II. E < B

67) Statements
   T < U = V ≤ W, Y ≤ C < G, X ≥ U > Y = Z
   Conclusions
   I. V < C
   II. C ≤ V
Directions (68-72): Study the following information carefully and answer the questions given below.

Seven person A, E, I, M, Q, U, and Y attend the interview on seven different days. Each one comes from different cities i.e. Mumbai, Jaipur, Agra, Raipur, Bangalore, Delhi, and Pune are not necessarily in the same order. The interview starts from Monday to Sunday.

Y attends the interview on Monday but not comes from Jaipur. Only two persons attend the interview between E and I. M attends the interview immediately before the one who comes from Bangalore, who doesn’t attend the interview on Thursday. A attends the interview on Sunday and comes from Delhi. Q doesn’t attend the interview on Saturday. The one who attends the interview on Saturday comes from Raipur. E comes from neither Mumbai nor Jaipur. There are three persons attend the interview between A and who comes from Pune. Neither E nor I attend on Saturday. Neither M nor I come from Agra. The Person comes from Agra attends the interview after the person comes from Mumbai.

68) Q attends the interview on which of the following day?
   a) Monday 
   b) Tuesday 
   c) Wednesday 
   d) Thursday 
   e) None of these

69) Who attends the interview on Saturday?
   a) M 
   b) I 
   c) U 
   d) A 
   e) None of these

70) E comes from which of the following city?
   a) Mumbai 

71) Who attends the interview immediately before the Person who comes from Pune?
   a) Y 
   b) E 
   c) Q 
   d) M 
   e) None of these

72) Which of the following combination is true?
   a) Monday – E - Agra 
   b) Wednesday – Q -Mumbai 
   c) Friday – I - Jaipur 
   d) Saturday-U-Raipur 
   e) None of these

Directions (73-74): Study the following information carefully and answer the questions given below.

David walks from home towards north direction and walks a distance of 2km. Now he takes a right turn and walks a distance of 8km. From that point he walks towards north direction and walks a distance of 8km. Now he takes right turn and walks a distance of 4km to reach the park. From that place he moves towards south direction and walks a distance of 10km to reach his office.

73) What is the shortest distance between David home to his office (in km)?
   a) 10 
   b) 11 
   c) 12 
   d) 13 
   e) None of these

74) David home is in which direction with respect to park?
    a) 

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75) How many pairs of letters are there in the word “SUBSERVIENCE” which has as many letters between them in the word as in alphabetical series?
   a) None
   b) One
   c) Two
   d) Three
   e) More than three

Directions (76-80): Study the following information carefully and answer the questions given below.

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|   |   |   |   |   |   | S | 2 | 3 | i | = | > | 7 | 8 | @ | % | 9 | & | 4 | 6 | - | # | 1 | 5 |   |   |   |   |

Condition:
   i) The first letter and the last letter are vowel both are coded as the first letter code.
   ii) The first letter and the letter are consonant both codes are interchanged.
   iii) The first letter vowel and the last letter consonant both are coded as “&”

76) ICGBNP
   a) &2+$@%
   b) 2+$@&
   c) &@+2$&
   d) &2+$@&
   e) None of these

77) FASUXI
   a) 34*61=
   b) 34=61*
   c) 3*461=
   d) 34*61=
   e) None of these

78) UPKIJA
   a) 6%7=>*
   b) 6%7=>>6
   c) 6%7=7>6
   d) 6%7=>>
   e) None of these

79) NBVWXK
   a) 7$-#1@
   b) 7$-1#7
   c) 7$-#1@
   d) 7#1$@
   e) None of these

80) AZXWVS
   a) 51#-&
   b) *51#-&
   c) 51#-4
   d) *51#-4
   e) None of these

Answers:

Quantitative Aptitude

1) Answer: c
   6P = 8Q = 12R = k
Then,  
P = \frac{k}{6} ; Q = \frac{k}{8} \quad R = \frac{k}{12}  
P : Q : R = \frac{k}{6} : \frac{k}{8} : \frac{k}{12}  
= 1/6 : 1/8 : 1/12  
= 4 : 3 : 2  
Hence, R’s share = Rs \left( 3645 \times \frac{2}{9} \right)  
= Rs \left( 405 \times 2 \right)  
= Rs.810  
Therefore R will receive Rs.810

2) Answer: b  
Let the quantity sold at a loss be x kg  
Let C.P per kg be rs.1  
Total cost price = Rs.18  
Total selling price = Rs \left[ 115\% \text{ of } (18 - x) + 97\% \text{ of } x \right]  
= Rs\left[ \frac{115}{100}(18-x) + \frac{97}{100}x \right]  
= Rs\left(20.7 - 1.15x + 0.97x \right)  
= Rs\left(20.7 - 0.18x \right)  
20.7 - 0.18x = 110\% \text{ of } 18  
20.7 - 0.18x = 110/100 \times 18  
20.7 - 0.18x = 19.8  
0.18x = 0.9  
x = 0.9 / 0.18  
X = 5 kg  

Shortcut:

The ratio of vegetables sold at gain and loss = 13 : 5  
The amount of vegetables sold at a loss = 18/18 * 5 = 5 kg

3) Answer: d  

Ratio of the ages of krishna and Prakash = 3 : 4 \quad (3X, 4X)  
Then,  
4X - 3X = 6 (since krishna is 6 years younger)  
X = 6 years  
Now, the required ratio = (3X + 6) : (4X + 6)  
= \left[3(6) + 6\right] : \left[4(6) + 6\right]  
= \left(18 + 6\right) : \left(24 + 6\right)  
= 24 : 30  
= 4 : 5  
Hence, the ratio of the ages of Krishna and Prakash after six years is \quad 4 : 5

4) Answer: a  
Total temperature on  
Sunday + Monday + Tuesday = 44 * 3 = 132°  
Monday + Tuesday + Wednesday = 42 * 3 = 126°  
Sunday – Wednesday = 132 – 126 = 6°  
Wednesday = 48°  
Sunday's temperature = 48 + 6 = 54°

5) Answer: d  
Required probability = 1 – probability of drawing same colour tiles  
=> 1 – \left[ \frac{7c4 + 6c4 + 5c4}{18c4} \right]  
=> 1 – \left[ \frac{[(7 * 6 * 5 / 3 * 2 * 1) + (6 * 5 / 1 * 2) + 5]/[(18 * 17 * 16 * 15) / (4 * 3 * 2 * 1)]] \right]  
=> 1 – \left[ (35 + 15 + 5) / 3060 \right]  
=> 1 – (11/612)  
=> 601/612

6) Answer: d  
Let the radius of the cylindrical bar be r  
Then height of the bar = 4r  
Radius of 1 globe = r/4  
No. of globes = volume of the cylinder / volume of the sphere  
=> \pi r^2 h / (4/3 \pi r^3)  
=> \pi * r^2 * 4r / (4/3 * \pi * (r/4)^3)  
=> \pi * 4 * r^3 * 3 * 4 * 4 * 4 / 4 * \pi * r^3  
=> 3 * 4 * 4 * 4  
=> 192
7) **Answer: a**

Capacity of 1st vessel = 350 ml
Capacity of 2nd vessel = 500 ml
Capacity of 3rd vessel = 150 ml

As the beaker filled by the same fractions,

\[
p/350 = q/500 = r/150 = (p + q + r) / (350 + 500 + 150)
\]

Thus, \( p + q + r = 750 \)

So, \( q/500 = (p + q + r) / (350 + 500 + 150) \)

\[
q = 750 * 500/1000 = 375 ml
\]

8) **Answer: b**

Rs.35000 after 4 years = \( 35000(1 + 25/100)^4 = 35000 \)

\( (1 + 1/4)^4 = 85449 \)

Rs.35000 after 3 years = \( 35000(1+25/100)^3 = 35000(1+1/4)^3 = 68359 \)

Rs.35000 after 2 years = \( 35000(1+25/100)^2 = 35000(1+1/4)^2 = 54687 \)

Rs.35000 after 1 year = \( 35000(1 + 25/100) = 35000(1 + 1/4) = 35000(5/4) = 43750 \)

Total amount after 4 years = \( 85449 + 68359 + 54687 + 43750 = Rs 252245 \)

9) **Answer: c**

From the information provided we know that,

Principal + 32% p.a. interest on principal for n years = 720 ........ (1)

Principal + 16% p.a. interest on principal for n years = 480 ........ (2)

Subtracting equation (2) from equation (1), we get

16% p.a. interest on principal for n years = Rs.240.

Now, we can substitute this value in equation (2), i.e.,

Principal + 240 = 480

Principal = 480 – 240

SI = PTR/100

Where, p = Rs.240, r = 16% p.a. and the simple interest = Rs.240.

Therefore, \( 240 = (240 * n * 16)/100 \)

\( n = 240 * 100 / 240 * 16 = 6.25 \) years

10) **Answer: c**

Area of a circle = \( \pi r^2 \)

\( \Rightarrow 616 = 22^2/7 \)

\( \Rightarrow 616 * (7/22) = r^2 \)

\( \Rightarrow r^2 = 196 \)

\( \Rightarrow r = 14 \) m

Circumference = \( 2 * 22/7 * 14 = 88 \) sq. m

Perimeter of the rectangle = \( 3 * 88 = 264 \) sq. m

264 = \( 2(l + 60) = 132 + 60 \)

\( l = 132 - 60 = 72 \)

Area of the rectangle = \( 72 * 60 = 4320 \) sq. m

11) **Answer: b**

% increase = \( [(240 – 180)/180] * 100 = 6000/180 = 33(1/3)% \)

12) **Answer: c**

2011 = \( 140 + 180 + 160 = 480 \)

2012 = \( 200 + 180 + 220 = 600 \)

2013 = \( 260 + 280 + 300 = 840 \)

2014 = \( 220 + 240 + 200 = 660 \)

2015 = \( 180 + 240 + 200 = 620 \)

2016 = \( 120 + 180 + 220 = 520 \)

13) **Answer: d**

2012 = \( [(220 – 160)/160] * 100 = 6000/160 = 37.5% \)

2013 = \( [(300 – 220)/220] * 100 = 8000/220 = 36.36% \)

2014 = \( [(300 – 200)/300] * 100 = 10000/300 = 33.33\% decrease \)
2015 => no change
2016 = [(220 – 200)/200] * 100 = 2000/200 = 10%

14) Answer: a
2011 = 140 + 180 + 160 = 480
2012 = 200 + 180 + 220 = 600
Required ratio = 480: 600 = 4: 5

15) Answer: a
%= 200 * 100/240 = 20000/240 = 83.33%

16) Answer: b
Staff = 120 + 80 = 200
Students = 2200 + 600 = 2800
Required ratio = 2800: 200 = 14: 1

17) Answer: c
IT = 90 => 4 : 5 => 40(male)
COMPUTER = 70 => 18:17 => 36(male)
40 + 36 = 76
Total = 90 + 70 = 160
Required percentage = 76 * 100/160 = 47.5%

18) Answer: a
Hindi student = 2200
Female student in Hindi = 2200/22 * 13 = 1300
Male student in Hindi = 2200/22 * 9 = 900
Required %= 400 * 100/900 = 44.44%

19) Answer: d
Number of females in ARTS department = 1600/32 * 15 = 750

20) Answer: b
Required average = 120 + 80 + 150 + 90 + 140 + 70 = 650

21) Answer: b
2005 E = 12 L
% P = (I – E) * 100 / E
50 = (I – 12) * 100 / 12
I = 6 + 12 = 18 L

22) Answer: a
P : Q = 40: 50
45 = (I – 40) * 100/40
I = 58L ……………(A)
50 = (I – 50) * 100/50
2500 = 100I - 5000
7500 = 100 I
I = 75L ……………………………(B)
P: Q = 58: 75

23) Answer: d
The information given is profit percentage. So, the data is insufficient to answer the given question.

24) Answer: d
45 = (30 - E) * 100/E
45E/100 = 30 – E
9E/20 = 30 – E
9E = 600 – 20E
29E = 600
E = 600/29 ……………(2003)
9E/20 = 30 – E
9E = 600 – 20E
29E = 600
E = 600/29 ……………(2003)
Ratio = (600/29) : (80/3) = (600 * 3) : (29 * 80)
= 1800: 2320 = 180: 232 = 45: 58

25) Answer: c
For P
40 = (I – E) * 100/E
40E = (I – E) 100
2E = 51 – 5E
51 = 7E
I = 7/5 E

For Q
50 = (116 - I - E) * 100/E
E = 2(116 - I - E)
E = 232 - 2I - 2E
2I = 232 - 3E
I = (232 - 3E)/2
7/5E = (232 - 3E)/2
14E = 1160 - 15E
29E = 1160
E = 1160/29 = 40
2E = 80

26) Answer: b
4p² + 8p + 3 = 0
4p² + 2p + 6p + 3 = 0
2p (2p + 1) + 3 (2p + 1) = 0
2 (2p + 1) (2p + 1) = 0
p = -0.5, -1.5
4q² - 29q + 45 = 0
4q² - 20q - 9q + 45 = 0
4q (q - 5) - 9 (q - 5) = 0
(q - 5) (q - 5) = 0
q = 2.25, 5
P < q

27) Answer: a
2p² - 23p + 21 = 0
2p² - 21p - 2p + 21 = 0
2p (p - 1) - 21 (p - 1) = 0
(2p - 21)(p - 1) = 0
p = 10.5, 1
q² + 42q + 272 = 0
q² + 8q + 34q + 272 = 0
q(q + 8) + 34 (q + 8) = 0
(q + 8)(q + 34) = 0
q = -8, -34
P > q

28) Answer: e
5p² - 26p + 21 = 0
5p² - 5p - 21p + 21 = 0

(5p - 21) (p - 1) = 0
p = 4.2, 1
2q² - 17q + 21 = 0
2q² - 14q - 3q + 21 = 0
2q (q - 7) - 3 (q - 21) = 0
(2q - 3) (q - 7) = 0
q = 7, 1.5

Relationship cannot be determined

29) Answer: d
p² - 21p + 104 = 0
P² - 13p - 8p + 104 = 0
(p - 8) (p - 13) = 0
p = 13, 8
q² - 33q + 260 = 0
q² - 13q - 20q + 260 = 0
(q - 13) (q - 20) = 0
q = 13, 20
p ≤ q

30) Answer: c
p² - 31p + 240 = 0
p² - 15p - 16p + 240 = 0
(p - 15) (p - 16) = 0
p = 15, 16
q² - 28q + 195 = 0
q² - 13q - 15q + 195 = 0
(q - 13) (q - 15) = 0
q = 13, 15
p ≥ q

31) Answer: b
(1678 - 1455 + 1132) x 4 =?
1355 * 4 =?
5420 =?

32) Answer: a
(12841 + 11411 + 13211 - 15148 - 16411) =?
37463 - 31559 =?
5904 =?

33) Answer: a
(24 x 18) + 1653 – 1345 =?
432 +1653 -1345 =?
2085 -1345 =?
740 =?

34) Answer: b
(134 x 114) – 1234 – 186 =?
15276 – 1234 - 186 =?
13856 =?

35) Answer: c
(3824.4 - 122.22)÷2 = ?
? = 1851.09

36) Answer: a
130  133  139  148
160 175
3  6  9  12
15
The difference of the following series is 3, 6, 9, 12, 15...

37) Answer: c

128 * 0.5 = 64
64 * 1 = 64
64 * 1.5 = 96
96 * 2 = 192
192 * 2.5 = 480

38) Answer: a
17  22  29  38  49  62
5  7  9  11  13
The difference of the following series is 5, 7, 9, 11, 13...

39) Answer: c
160  176  192  208  224  240
16  16  16  16  16
The difference of the following series is 16...

40) Answer: d
10  15  25  45  85  165
5  10  20  40  80
The difference of the following series is 5, 10, 20, 40, 80

Reasoning Ability
P sits second to the right of the one who likes Pen. R is an immediate neighbour of N, who likes Pen. S and T are sitting opposite to each other. T is not the neighbour of N and likes Scale. The one who likes pencil sits third to the left of Q. Q is an immediate neighbour of neither S nor T.

41) Answer: (E)

42) Answer: (B)
If they interchange their positions raj is 25th from the right end and to the left of ram there is 16 persons. So totally = 25+16=41

Directions (43-47):
Case 2 does not satisfy the condition, the one who likes pencil sits third to the left of Q. So, this case will be rejected. The one who likes Book and the one who likes Ink are immediate neighbours. M does not like pad. Only one Person sits between T and the one who likes Ink. O likes Note and is not an immediate neighbour of T. Neither M nor S likes Eraser.

43) Answer: (C)
44) Answer: (A)
45) Answer: (B)
46) Answer: (D)
47) Answer: (E)

Direction (48-52):
48) Answer: (B)

49) Answer: (D)
50) Answer: (C)
51) Answer: (E)
52) Answer: (A)
Directions (53-57):
Codes: by comparing 1,2,3 sentences we can get codes for
- Challenges: zyx
- Technological: ghi
- Financial: wvu

Remaining in sentence 1: and remain - xyz kji
By comparing 4th sentence with the above one we can get the code for
And – xyz
Remain – kji

Remaining in sentence 2: banks monitor - rst pon
By comparing 3rd sentence with the above one we can get the code for
Banks - rst
Monitor - pon

Remaining in sentence 3: rbi screening - lkg def
By comparing 4th sentence with the above one we can get the code for
Rbi – lkg
Screening – def.

53) Answer: (C)
54) Answer: (D)
55) Answer: (A)
56) Answer: (D)
57) Answer: (E)

Directions (58-62):
Q sits one of the extreme ends. There are two persons sit between Q and P, Whose seminar date is 24th. T sits fourth to the left of U and an immediate neighbour of R. P is not a neighbour of R and U.

There are two persons sit between the one whose seminar date is 16th and the one whose seminar date is 18th, who sits second from the right end.

58) Answer: (C)
59) Answer: (E)
60) Answer: (B)
61) Answer: (D)
62) Answer: (D)

Directions (63-67):

63) Answer: (E)

I. A< I (False)
II. K <I (True)
64) Answer: (A)
\[ \text{I. } J < O \quad \text{(True)} \\
\text{II. } F > K \quad \text{(True)} \]

65) Answer: (B)
\[ \text{I. } Q < K \quad \text{(True)} \\
\text{II. } K < T \quad \text{(False)} \]

66) Answer: (D)
\[ \text{I. } C < X \quad \text{(False)} \\
\text{II. } E < B \quad \text{(False)} \]

67) Answer: (C)
\[ \text{I. } V < C \quad \text{(False)} \\
\text{II. } C \leq V \quad \text{(False)} \]

Directions (68-72):
Y attends the interview on Monday but not from Jaipur. Only two persons attend the interview between E and I. A attends the interview on Sunday and comes from Delhi. The one who attends the interview on Saturday comes from Raipur. There are three persons sit between A and who comes from Pune. Neither E nor I attend on Saturday.

<table>
<thead>
<tr>
<th>Days</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons</td>
<td>Cities</td>
</tr>
<tr>
<td>Monday</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Tuesday</td>
<td>I</td>
<td>E</td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td>Pune</td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>E</td>
<td>I</td>
</tr>
<tr>
<td>Saturday</td>
<td>A</td>
<td>Delhi</td>
</tr>
</tbody>
</table>

M attends the interview on immediately before the one who comes from Bangalore, who doesn’t attend the interview on Thursday. E comes from neither Mumbai nor Jaipur. Q doesn’t attend the interview on Saturday. Neither M nor I come from Agra.

<table>
<thead>
<tr>
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<tr>
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<td>Monday</td>
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<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Q</td>
<td>Pune</td>
</tr>
<tr>
<td>Thursday</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>E</td>
<td>Bangalore</td>
</tr>
<tr>
<td>Saturday</td>
<td>U</td>
<td>Raipur</td>
</tr>
<tr>
<td>Sunday</td>
<td>A</td>
<td>Delhi</td>
</tr>
</tbody>
</table>

Case 1 will be dropped because neither M nor I come from Agra. The Person comes from Agra attends the interview after the person comes from Mumbai.

68) Answer: (C)
69) Answer: (C)
70) Answer: (B)
71) Answer: (B)
72) Answer: (D)
Directions (73-74):

73) Answer: (C)
74) Answer: (E) southwest

77) Answer: (C)
3*461=

78) Answer: (B)
6%7=>6

79) Answer: (C)
7$-#1@

80) Answer: (A)
& 51#-&