

**REASONING ABILITY**

**Directions (Q. 1-7): Study the following information and answer the questions given below:**

Eight friends-A, B, C, D, E, F, G and H - are sitting around a circular table not necessarily in the same order. Three of them are facing outward while five are facing towards the centre. There are equal number of males and females in the group.

C is facing the centre. E is sitting third to the right of C. F is sitting third to the left of E. Three persons are sitting between F and B. The immediate neighbours of B are females. G is sitting third to the right of F. D is sitting third to the right of A. A is not an immediate neighbour of E. The immediate neighbours of E are males and are facing the centre. The immediate neighbours of D are females and face outside. The one sitting third to the left of B is a male. No female is an immediate neighbour of G.

1. Who is sitting second to the right of E?  
1) C                      2) B                      3) G  
4) H                      5) None of these
2. How many persons are sitting between Hand C when counted from the left side of H?  
1) One                    2) Two                    3) Three  
4) Four                    5) More than four
3. Which of the following statements is true regarding H?  
1) The one who is second to the right of H is a female.  
2) H is facing the centre.  
3) H is a male.  
4) The immediate neighbours of H are facing outside.  
5) None is true.
4. What is D's position with respect to G?  
1) Third to the left                      2) Third to the right  
3) Second to the left                    4) Second to the right  
5) None of these

**Directions (Q. 5-6): Four of the following five are alike in a certain way based on their seating positions in the above arrangement and hence form a group. Which of the following does not belong to the group?**

5. 7    5    7    17    63    ?  
1) 308                      2) 302                      3) 309  
4) 409                      5) 390
6. 50    ?    61    89    154    280  
1) 52                      2) 51                      3) 60  
4) 62                      5) 65
7. If all the friends are asked to sit in an alphabetical order starting from A in an anti clockwise direction, the positions of how many will remain unchanged (excluding A)?  
1) Four                    2) Three                    3) Two

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4) One

5) None

**Directions (8-12):** In these questions, the relationship between different elements is shown in the statements. These statements are followed by two conclusions. Mark answer

- 1) If only conclusion I follows.
- 2) If only conclusion II follows.
- 3) If either conclusion I or conclusion II follows.
- 4) If neither conclusion I nor conclusion II follows.
- 5) If both conclusion I and conclusion II follow.

8. Statements:  $A \geq B = C$ ;  $B < D \leq E$

Conclusions: I.  $D > A$     II.  $E > C$

9. Statements:  $L > U \geq K$ ;  $Z < U < R$

Conclusions: I.  $L > Z$     II.  $K < R$

10. Statements:  $Y < J = P \geq R > I$

Conclusions: I.  $J > I$     II.  $Y < R$

11. Statements:  $V \geq K > M = N$ ;  $M > S$ ;  $T < K$

Conclusions: I.  $T < N$     II.  $V = S$

12. Statements:  $F \leq X < A$ ;  $R < X \leq E$

Conclusions: I.  $F \leq E$     II.  $R < F$

**Directions (13-17):** Study the following information carefully and answer the given questions.

- (i) Five topics A, B, C, D and E are to be discussed, one topic on each day, from Monday to Saturday.
- (ii) Topic A will be discussed before E and topic B will be discussed before D.
- (iii) Topics B and D will not be discussed on the first day.
- (iv) There will be one rest day denoted by F.
- (v) There will be a gap of two days between the days on which Topics D and B will be discussed.
- (vi) Topic C will be discussed immediately before the rest day. The rest day will not be the second or the fourth day.

13. Which of the following is the correct sequence of the discussion on the topics including the rest day 'F'?

- 1) AEBFCD
- 2) ABECFD
- 3) AEBCFD
- 4) Cannot be determined
- 5) None of these

14. Which of the following is a correct statement?

- 1) Topic A will be discussed on Tuesday.
- 2) Discussion on topic C will be immediately preceded by discussion on topic B.
- 3) Discussion on topic B will take place before that on A.
- 4) Thursday is the rest day.
- 5) None of these

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15. On which of the following days will the topic C be discussed?
- 1) Tuesday                      2) Wednesday                      3) Friday  
4) Cannot be Determined      5) None of these
16. How many days' gap will be there between the days on which topic E and B will be discussed?
- 1) Nil                              2) One                              3) Two  
4) Three                              5) None of these
17. With reference to A, the discussion on topic E will take place \_\_\_\_\_.
- 1) immediately on the next day      2) after a day's gap  
3) after three days                      4) Cannot be Determined  
5) None of these

**Directions (Q. 18-22): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer**

- 1) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.  
2) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.  
3) if the data either in statement I alone or in statement II alone are sufficient to answer the question.  
4) if the data even in both statements I and II together are not sufficient to answer the question.  
5) if the data in both statements I and II together are necessary to answer the question.
18. How is 'v' letter written in a code language?
- I.** 'please write a letter' is written as '7218', and 'received a Greek letter' is written as '7513'.  
**II.** 'write in English please' is written as '2084' and 'a letter in Greek' is written as '5714'.
19. Among A, B, C, D and E, seated in a straight line, facing North, who sits exactly in the middle of the line?
- I.** A sits third to the left of D. B sits on the immediate right of C.  
**II.** B sits second to the right of A. E is not an immediate neighbour of D.
20. A six-storey building consisting of an unoccupied ground floor and five floors on top of the ground floor numbered 1, 2, 3, 4 and 5 houses five different persons, viz A, B, C, D and E. Who lives on the third floor?
- I.** C lives on an even-numbered floor. A lives immediately above D. B lives immediately above A.  
**II.** D lives on an odd-numbered floor. A and B are immediate neighbours. Similarly, C and E are immediate neighbours. C does not live on an odd-numbered floor.
21. Are all the four friends, Abhay, Kavita, Prashant and Yasir, who are sitting around a circular table, facing the centre?
- I.** Kavita sits second to the left of Abhay. Abhay faces the centre. Yasir sits on the immediate right of Abhay as well as Kavita.  
**II.** Prashant sits third to the right of Kavita. Abhay sits on the immediate right of Prashant as well as Yasir.
22. Is R the grand-daughter of C?
- I.** The only sister of A is the mother of R's brother B.  
**II.** C, the mother of A, has only one grandson B.

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**Directions (Q. 23-27):** In each question below are given two/three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts. Give answer

- 1) If only conclusion I follows.
- 2) If only conclusion II follows.
- 3) If either conclusion I or conclusion II follows.
- 4) If neither conclusion I nor conclusion II follows.
- 5) If both conclusion I and conclusion II follow.

**(Q.23-24):**

**Statements:** All gliders are parachutes.

No parachute is an airplane.

All airplanes are helicopters.

23. **Conclusions: I.** No helicopter is a glider.

**II.** All parachutes being helicopters is a possibility.

24. **Conclusions: I.** No glider is an airplane.

**II.** All gliders being helicopters is a possibility.

25. **Statements:** Some mails are chats.

All updates are chats.

**Conclusions: I.** All mails being updates is a possibility.

**II.** No update is a mail.

**(Q.26-27):**

**Statements:** No stone is metal.

Some metals are papers.

All papers are glass.

26. **Conclusions: I.** No glass is metal.

**II.** At least some glasses are metals.

27. **Conclusions: I.** All stones being glass is a possibility.

**II.** No stone is paper.

**Directions (Q. 28-32):** Study the following information carefully and answer the given questions: A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement:

**Input** : gain 96 63 forest 3878 deep house

**Step I** : deep gain 9663 forest 3878 house

**Step II** : deep 38 gain 96 63 forest 78 house

**Step III** : deep 38 forest gain 96 63 78 house

**Step IV** : deep 38 forest 63 gain 96 78 house

**Step V** : deep 38 forest 63 gain 78 96 house

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**Step VI:** deep 38 forest 63 gain 78 house 96

and Step VI is the last step of the rearrangement of the above input.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

28. **Input:** train 59 47 25 over burden 63 sky

Which of the following steps will be the last but one?

- 1) VI                      2) V                      3) IV  
4) VII                     5) None of these

29. **Input:** service 465896 of there desk 15

Which of the following will be step VI?

- 1) desk 15 over service 46 58 96 there  
2) desk 15 over 46 service there 58 96  
3) desk 15 over 46 service 58 there 96  
4) desk 15 over 46 service 58 96 there  
5) There will be no such step.

30. Step II of an input is: below 12 93 house floor 69 57 task

Which of the following will definitely be the input?

- 1) 93 house 89 57 below task floor 12  
2) 93 house below 69 57 task floor 12  
3) 93 house floor 69 57 task below 12  
4) Cannot be determined  
5) None of these

31. Step III of an input is: art 24 day 83 71 54 star power

Which of the following steps will be the last?

- 1) V                      2) VIII                      3) IX  
4) VII                     5) None of these

32. Step II of an input is : cold 17 wave 69 never desk 52 43

How many more steps will be required to complete the rearrangement?

- 1) Six                      2) Five                      3) Four  
4) Three                    5) None of these

33. The position of how many digits in the number 8247531 will remain unchanged after the digits are rearranged in ascending order within the number?

- 1) None                    2) One                      3) Two  
4) Three तीन            5) More than three

34. Among P, Q, R, S, T, each having scored different marks, R scored more marks than P and T. Q scored less marks than T. S did not score the highest marks. Who among them scored the highest?

- 1) P                      2) T                      3) R  
4) Data Inadequate            5) None of these

35. In a row of twenty-five children facing North, W is fifth to the right of R, who is sixteenth from the right end of the row. What is W's position from the right end of the row?

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- 1) Eleventh      2) Tenth      3) Twelfth  
4) Data Inadequate      5) None of these

### QUANTITATIVE APTITUDE

Study the table and answer the given question (1-5)

Data related to Journals uploaded by 5 Digital libraries during 3 years

Digital Libraries	Journals (both national and international) uploaded in 2001	Respective ratio of national to international journals uploaded in 2001	Journals (both national and international) uploaded in 2002	Respective ratio of national to international journals uploaded in 2002	Journals (both national and international) uploaded in 2003	Respective ratio of national to international journals uploaded in 2003
A	924	4 : 7	690	11 : 12	860	13 : 7
B	836	13 : 6	1176	9 : 5	1260	10 : 11
C	918	10 : 17	884	10 : 7	924	5 : 7
D	806	8 : 5	585	4 : 5	722	10 : 9
E	792	11 : 7	1035	10 : 13	979	5 : 6

36. The average number of national journals uploaded from A and D in the year 2001 is what percent of number of international journals uploaded in C from 2001?(approx)

- 1) 90      2) 95      3) 86  
4) 72      5) 80

37. What is the respective ratio between total number of journals (both national and international) uploaded by digital libraries C and E together in 2001 and total number of journals (both national and international) uploaded by digital libraries D and E together in 2002 ?

- 1) 21 : 20    2) 17 : 16      3) 13 : 12  
4) 19 : 18    5) 23 : 22

38. Only 25% of journals (both national and international) uploaded by digital library E in 2001 were related to Sociology. If 100 national journals uploaded by digital library E in 2001 were related to sociology, how many international journals uploaded by the same library in the same year were related to sociology ?

- 1) 200    2) 100      3) 98  
4) 92      5) 120

39. Digital library D had to purchase 80% of international journals uploaded by it in 2002. If the average cost per international journal purchased by digital library D in 2002 was Rs.396. What was the amount spent by digital library D in purchasing international journals in 2002 ?

- 1) Rs. 1,09,6707      2) Rs. 1,02,960      3) Rs. 1,08,940  
4) Rs. 1,04,240      5) Rs.1,06,360

40. What is the total number of International journals uploaded by all the given digital libraries in 2001 ?

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- 1) 2048      2) 2254      3) 2086  
4) 2188      5) 1992

**Directions (Q. 41-45): Study the following graph carefully and answer the questions that follow:**

Mobile	Cost Price	Selling Price	% of Profit	Profit
Samsung	35,000	----	----	3,500
Apple	53,000	----	14%	----
Micromax	----	22,000	----	----
LG	28,000	----	----	----
HTC	----	33,000	10%	----
Sony	32,000	----	----	4,000

41. What is the selling price and % of Profit of Sony Mobile ?  
1) 36,000 and 12.5%      2) 36,00 and 15%      3) 36,000 and 18%  
4) 36,000 and 20%      5) 36,000 and 23%
42. What is the % of Profit Micromax, If Cost Price of Micromax is  $\frac{3}{5}$  of Cost Price of HTC mobile ?  
1)  $33\frac{1}{3}\%$       2)  $26\frac{4}{9}\%$   
3)  $22\frac{2}{9}\%$       4)  $24\frac{5}{9}\%$       5)  $25\frac{7}{9}\%$
43. What is the selling price and % of profit of LG mobile?. If profit is 500 more than the profit of Samsung mobile .  
1) 32,000 and  $14\frac{1}{7}\%$       2) 34,000 and  $14\frac{4}{7}\%$       3) 32,000 and  $15\frac{2}{7}\%$   
4) 34,000 and  $17\frac{5}{7}\%$       5) 32,000 and  $14\frac{2}{7}\%$
44. What is the profit earned on Apple mobile ?  
1) 7360      2) 7450      3) 7420  
4) 7560      5) 7620
45. What is the ratio between Cost Price and Selling price of Samsung ?  
1) 14:15      2) 10:13      3) 10:14  
4) 14:15      5) 10:11
46. A shopkeeper sells notebooks at the rate of Rs. 457 each and earns a commission of 4%. He also sells pencil boxes at the rate of Rs 80 each and earns a commission of 20%. How much amount of commission will he earn in two weeks if he sells 10 notebooks and 6 pencil boxes a day?  
1) Rs. 1,956      2) Rs. 1,586      3) Rs. 1,496  
4) Rs. 1,596.      5) None of these
47. Train A crosses a stationary Train B in 50 seconds and a pole in 20 seconds with the same speed. The length of the Train A is 240 metres. What is the length of the stationary Train B?  
1) 360 metres      2) 260 metres      3) 300 metres

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- 4) Cannot be determined      5) None of these

48. In a test, minimum passing percentage for girls and boys is 35% and 40% respectively. A boy scored 483 marks and failed by 117 marks. What is the minimum passing marks for girls?

- 1) 425      2) 520      3) 500  
4) 625      5) None of these

49. Twelve per cent of Kaushal's monthly salary is equal to sixteen per cent of Nandini's monthly salary. Suresh's monthly salary is half that of Nandini's monthly salary. If Suresh's annual salary is Rs 1.08 lacs, what is Kaushal's monthly salary?

- 1) Rs. 20,000      2) Rs. 18,000      3) Rs. 26,000  
4) Rs. 24,000      5) None of these

50. 8 men can complete a piece of work in 20 days. 8 women can complete the same work in 32 days. In how many days will 5 men and 8 women together complete the same work?

- 1) 16 days      2) 12 days      3) 14 days  
4) 10 days      5) None of these

**Directions (Q. 51-55): Ratio of production between medicines A and B and the percent profit earned for the two medicines.**

COMPANY	RATIO OF PRODUCTION		PERCENT PROFIT EARNED	
	Medicine A	Medicine B	Medicine A	Medicine B
<b>X1</b>	<b>3</b>	<b>2</b>	<b>32</b>	<b>35</b>
<b>X2</b>	<b>2</b>	<b>3</b>	<b>25</b>	<b>20</b>
<b>X3</b>	<b>1</b>	<b>2</b>	<b>30</b>	<b>24</b>
<b>X4</b>	<b>1</b>	<b>4</b>	<b>35</b>	<b>25</b>
<b>X5</b>	<b>5</b>	<b>3</b>	<b>28</b>	<b>30</b>
<b>X6</b>	<b>3</b>	<b>5</b>	<b>15</b>	<b>25</b>
<b>X7</b>	<b>4</b>	<b>1</b>	<b>20</b>	<b>22</b>

51. Find the ratio of cost of production of medicine A by Company X2 to that by Company X6?

- 1) 1:2    2) 2:3    3) 2:1  
4) 3:5    5) None of these

52. The total cost of production of medicine A by company X2 and medicine B by X1?

- 1) Rs. 6.6 crores      2) Rs. 3.35 crores      3) Rs. 8.12 crores  
4) Rs. 7.8 crores      5) None of these

53. What is the total cost of production of medicine B by Companies X3 and X4 together?

- 1)      1)



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- Rs. 7.45 crores    2) Rs. 9 crores    3) Rs. 8.50 crores  
4) Rs. 11 crores    5) None of these

54. What is the total profit earned by Company X3 for medicines A and B together?

- 1) Rs. 2.34 crores    2) Rs. 4.86 crores    3) Rs. 96.4 lakhs  
4) Rs. 1.44 crores    5) None of these

55. The profit earned by Company X5 on production of medicine A added to the profit earned by Company X7 on production of medicine B is approximately

- 1) Rs. 9.18 crores    2) Rs. 5.19 crores    3) Rs. 6.71 crores  
4) Rs. 4.27 crores    5) None of these

**Directions (Q. 56-60): Study the following pie-chart and bar-graph and answer the following questions.**

**Percentage-wise distribution of teachers in six different districts**

**Total number of Teachers = 4500**

**Percentage of Teachers**

Name of the Car	Speed of the Car (In Kmph)	Distance between destinations (In Km)	Time Required (In hours)
A	77	Between I and II = 188	--
B	--	Between II and III = 254	5 $\frac{12}{23}$
C	--	Between III and IV = 228	5 $\frac{1}{3}$
D	--	Between IV and V = 162	6
E	36	Between V and VI = --	8 $\frac{2}{3}$
F	22	Between VI and VII = --	6 $\frac{7}{11}$
G	42	Between VII and VIII = --	4 $\frac{1}{3}$

56. What is the respective ratio of the distance between destinations IV and VII and the distance between destinations V and VIII ?

- 1) 19:22    2) 29:34    3) 33:38  
4) 31:32    5) 29:30

57. Car H covered distance between destination IV and V at a speed of 18kmph and the distance between destination V and VI at a speed of 60 kmph. What was its average speed in the journey ? ( approx inkmph)

- 1) 39    2) 58    3) 32  
4) 29    5) 27

58. Car A started from Destination I towards Destination V at 5 00 am. Car D started from Destination V towards

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Destination I at the same time At what time will they meet ?

- 1) 11 am      2) 1 am 3) 1.45 am  
4) 10.30      5) 12.30

59. How much time will Car B take to cover the distance between destinations I and VIII ? (in hours)

- 1) 35      2) 37      3) 26  
4) 32      5) 28

60. If H ' s speed 10 more than than A.how many hours early than to reach a destination from I to VIII( approximately) ?

- 1) 4 hrs      2) 2 hrs      3) 5 hrs  
4) 1 hrs      5) 6 hrs

**Directions (Q. 61-65): In the following questions, two equations numbered I and II are given. You have to solve both the equations and**

**Give answer (1) if  $x > y$**

**Give answer (2) if  $x \geq y$**

**Give answer (3) if  $x < y$**

**Give answer (4) if  $x \leq y$**

**Give answer (5) if  $x = y$  or the relationship cannot be established.**

61. I.  $x^2 - 19x + 84 = 0$

II.  $y^2 - 25y + 156 = 0$

62. I.  $x^3 - 468 = 1729$

II.  $y^2 + 1733 + 1564 = 0$

63. I.  $\frac{9}{\sqrt{x}} + \frac{19}{\sqrt{x}} = \sqrt{x}$

II.  $y^4 - \frac{(2 \times 14)^{11/2}}{\sqrt{y}} = 0$

64. I.  $\sqrt{784}x + 1234 = 1486$

II.  $\sqrt{1089}y + 2081 = 2345$

65. I.  $\frac{12}{\sqrt{x}} - \frac{23}{\sqrt{x}} = 5\sqrt{x}$

II.  $\frac{\sqrt{y}}{12} - \frac{5\sqrt{y}}{12} = \frac{1}{\sqrt{y}}$

**Directions (Q. 66-70): Study the information carefully to answer the questions that follow.**

In a ship there are 1200 passengers. 18 per cent of the total number of passengers are from Britain. Two-fifths of the total number of passengers are from South Africa. 6 per cent of the total number of passengers are from Madagascar, The remaining number of passengers are from India. 25 per cent of the number of passengers from Britain are females. Half the number of passengers from South Africa are males. There is no female passenger from Madagascar. Two-thirds of the number of passengers from India are females.

66. What is the ratio of the number of passengers from Madagascar, the number of female passengers from South Africa and the total number of passengers from India?

- 1) 2:5:18      2) 3:10:18      3) 3:11:18  
4) 2: 18: 5      5) None of these

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67. The number of male passengers from South Africa is approximately what percentage of the total number of passengers from Britain?
- 1) 111            2) 115            3) 120  
4) 125            5) 131
68. What is the average number of male passengers from all the four countries?
- 1) 154.5            2) 164.5            3) 145  
4) 164            5) None of these
69. What is the difference between the number of male passengers from Madagascar and the number of male passengers from India?
- 1) 64            2) 82            3) 74  
4) 72            5) None of these
70. What is the total number of male passengers from Britain and female passengers from India together?
- 1) 340            2) 420            3) 350  
4) 460            5) None of these

### ENGLISH LANGUAGE

**Directions (Q. 71-75):** Read the following passage carefully and answer the questions given below it. Certain words have been printed in bold to help you locate them while answering some of the questions.

India's colleges and universities, with just a few exceptions, have become large, under-funded, ungovernable institutions. At many of them, politics has intruded in campus life, influencing academic appointments and decisions across levels. Under-investment in libraries, information technology, laboratories and classrooms makes it very difficult to provide top-quality instruction or engage in cutting-edge research. The rise in the number of part-time teachers and the freeze on new full-time appointments in many places has affected morale in the academic profession. The lack of accountability means that teaching and research performance is seldom measured. The system provides few **incentives** to perform. Bureaucratic inertia hampers change. Student unrest and occasional faculty agitation disrupt operations. Nevertheless, with a semblance of normality, faculty administrators are able to provide teaching, coordinate examinations, and award degrees.

Even the small top tier of higher education faces serious problems. Many IIT graduates, well trained in technology, have chosen not to contribute their skills to the **burgeoning** technology sector in India. Half leave the country immediately upon graduation to pursue advanced study abroad and most do not return. A stunning 86 per cent of students in science and technology fields from India who obtain degrees in the United States do not return home immediately following their study. Another significant group, of about 30 per cent, decides to earn MBAs in India because local salaries are higher and are lost to science and technology. A corps of dedicated and able teachers work at the IITs and IIMs, but the lure of jobs abroad and in the private sector makes it increasingly difficult to retain the best and brightest to the academic profession.

Few in India are thinking creatively about higher education. There is no field of higher education research. Those in government as well as academic leaders seem content to do the "same old thing". Academic institutions and systems have become large and complex. They need good data, careful analysis, and creative ideas. In China, more than two dozen higher education research centres and several government agencies are involved in higher education

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policy for optimum planning. India has survived with an increasingly mediocre higher education system for decades. Now, as India strives to compete in a globalised economy in areas that require highly trained professionals, the quality of higher education becomes increasingly important. So far, India's large educated population base and its reservoir of at least moderately well-trained university graduates have permitted the country to move ahead. But, the competition is **fierce**. China, in particular, is heavily investing in improving its best universities with the aim of making a small group of them world class in the coming decade, and making a larger number internationally competitive research universities.

To compete successfully in the knowledge-based economy of the 21st century, India needs enough universities that not only produce bright graduates for export but can also support sophisticated research in a number of scientific and scholarly fields and produce at least some of the knowledge and technology needed for an expanding economy. How can India build a higher education system that will permit it to join developed economies? The newly emerging private sector in higher education cannot spearhead academic growth. Several of the well-endowed and effectively managed private institutions maintain reasonably high standards, although it is not clear whether these institutions will be able to sustain themselves in the long run. They can help produce well-qualified graduates in such fields as management, but they cannot form the basis for comprehensive research universities. This sector lacks the resources to build the facilities required for quality instruction and research in the sciences. Most of the private institutions do not focus on advanced training in the sciences.

Only public universities have the potential to be truly world-class institutions. But these institutions have not been adequately or consistently supported. The top institutions require sustained funding from public sources. Academic salaries must be high enough to attract excellent scientists and scholars. Fellowships and other **grants** should be available for bright students. An academic culture that is based on merit-based norms and competition for advancement and research funds is a necessary component, as is a **judicious** mix of autonomy to do creative research and accountability to ensure productivity. World-class universities require world-class professors and students and a culture to sustain and stimulate them.

71. What, according to the author, is the shortfall of our government officials as well as academicians when it comes to higher education?
- 1) They are of the opinion that India has the best system of higher education in the world.
  - 2) They believe that it is the responsibility of private institutions to bring about a change in higher education.
  - 3) They are unaware of the new developments in the field of higher education.
  - 4) They are unwilling to invest money in higher education despite getting sufficient grants for the purpose.
  - 5) They do not think innovatively in the direction of bringing about a change in higher education and are stuck in a rut.
72. Which of the following is/are the problem/s faced by, Indian colleges and universities?
- (A) Political interference in decision making  
(B) Lack of funding necessary for improvement in classrooms, libraries, etc  
(C) Hiring of teachers on a part-time basis
- 1) Only (A)
  - 2) Only (B) and (C)
  - 3) Only (C)
  - 4) Only (A) and (B)
  - 5) All (A), (B) and (C)
73. Which of the following steps has China taken to improve higher education?
- (A) Their education policy formation involves many government bodies for thoughtful planning.  
(B) They are sanctioning grants to their teachers to facilitate the improvement process.  
(C) They are investing in universities to make them internationally competitive.
- 1) Only (B)
  - 2) Only (A) and (C)
  - 3) Only (C)
  - 4) Only (B) and (C)
  - 5) All (A), (B) and (C)

## IBPS PO Pre (2016) - Model Paper 1

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74. How, according to the author, has India progressed despite a mediocre higher education system?

- 1) By borrowing ideas as well as technology from the West
- 2) By convincing the world that it is more knowledgeable than it actually is
- 3) On the basis of its fairly competent graduates and a large number of educated population
- 4) Because of its sound and progressive economic policies
- 5) On the basis of the goodwill accumulated by it over the years

75. Which of the following is possibly the most appropriate title for the passage?

- 1) Literacy in India
- 2) State of Higher Education in India
- 3) Top Universities of India
- 4) Educational Institutes in India
- 5) Comparative Study of Higher Education in India and China

**Directions (Q. 76-80):** Read the following passage carefully and answer the questions given below it. Banking sector reforms in India were introduced in order to improve efficiency in the process of financial intermediation. It was expected that banks would take advantage of the changing operational environment and improve their performance. Towards this end, the Reserve Bank of India initiated a host of measures for the creation of a competitive environment. Deregulation of interest rates on both deposit and lending sides imparted freedom to banks to appropriate price their products and services. To compete effectively with non-banking entities, banks were permitted to undertake newer activities like investment banking, securities trading and insurance business. This was facilitated through amendments in the relevant acts which permitted PSBs to raise equity from the market up to threshold limit and also enabling the entry of new private and foreign banks. This changing face of banking led to an erosion of margins on traditional banking business, promoting banks to search for newer activities to augment their free incomes. At the same time, banks also needed to devote focused attention to operational efficiency in order to contain their transaction costs. Simultaneously with the deregulation measures prudential norms were instituted to strengthen the safety and soundness of the banking system. Recent internal empirical research found that over the period 1992-2003, there has been a discernible improvement in the efficiency of Indian banks. The increasing trend in efficiency has been fairly uniform, irrespective of the ownership pattern. The rate of such improvement has, however, not been sufficiently high. The analysis also reveals that PSBs and private sector banks in India did not differ significantly in terms of their efficiency measures. Foreign banks, on the other hand, recorded higher efficiency as compared with their Indian counterparts.

76. Prudential norms were initiated in the banking sector with a view to

- 1) Increase operational efficiency
- 2) Contain the non-performing assets
- 3) Strengthen the soundness of banking system
- 4) Improve the customer service
- 5) None of these

77. Banking sector reforms in India were introduced for the purpose of

- 1) Giving more and more employment opportunities to the educated unemployed
- 2) Taking care of the downtrodden masses
- 3) Increasing efficiency in the banking activities
- 4) Giving better return to the Central Government
- 5) None of these

## IBPS PO Pre (2016) - Model Paper 1

78. Banks can control their transaction costs by

- 1) Restricting their lending activities
- 2) Undertaking more and more non-banking activities
- 3) Encouraging the customers to bank with other banks
- 4) Devoting more attention to operational efficiency
- 5) None of these

**Directions (Q. 79-80): Choose the word which is most similar in meaning to the word printed in bold as used in the passage.**

79. **JUDICIOUS**

- |                 |           |               |
|-----------------|-----------|---------------|
| 1) Hard working | 2) Legal  | 3) Thoughtful |
| 4) Difficult    | 5) Shrewd |               |

80. **CONTENT**

- |              |              |              |
|--------------|--------------|--------------|
| 1) Unhappy   | 2) Matter    | 3) Enclosure |
| 4) Satisfied | 5) Substance |              |

**Directions (Q. 81-85): Each question below has two blanks, each blank indicating that something has been omitted. Find out which option can be used to fill up the blank in the sentence in the same sequence to make it meaningfully complete.**

81. The water transport project on the west coast is \_\_\_\_\_ to get a shot in the arm with a new plan in which the Road Development Corporation will build the infrastructure and \_\_\_\_\_ a private party to operate the service.

- |                   |                  |                   |
|-------------------|------------------|-------------------|
| 1) scheduled, let | 2) verge, permit | 3) set, sanctions |
| 4) slated, allow  | 5) bound, task   |                   |

82. As the weekend finally rolled around the city folk were only \_\_\_\_\_ happy to settle down and laugh their cares \_\_\_\_\_.

- |               |              |                   |
|---------------|--------------|-------------------|
| 1) just, afar | 2) too, away | 3) extremely, off |
| 4) very, up   | 5) so, on    |                   |

83. The flood of brilliant ideas has not only \_\_\_\_\_ us, but has also encouraged us to \_\_\_\_\_ the last date for submission of entries.

- |                        |                     |                     |
|------------------------|---------------------|---------------------|
| 1) overwhelmed, extend | 2) enjoyed, stretch | 3) dismayed, decide |
| 4) scared, scrap       | 5) happy, boundary  |                     |

84. \_\_\_\_\_ about prolonged power cuts in urban areas, the authorities have decided to \_\_\_\_\_ over to more reliable and eco-friendly systems to run its pumps.

- |                      |                      |                   |
|----------------------|----------------------|-------------------|
| 1) Worried, shift    | 2) Frantic, move     | 3) Troubled, jump |
| 4) Concerned, switch | 5) Endangered, click |                   |

85. The high cutoff marks this year have \_\_\_\_\_ college admission-seekers to either \_\_\_\_\_ for lesser known colleges or change their subject preferences.

- |                         |                    |                   |
|-------------------------|--------------------|-------------------|
| 1) cajoled, ask         | 2) pressured, sit  | 3) forced, settle |
| 4) strained, compromise | 5) entrusted, wait |                   |

**Directions (Q. 86-90): In each sentence below, words have been printed in bold which are numbered 1 3) and**

## IBPS PO Pre (2016) - Model Paper 1

4). One of these words may be wrongly spelt inappropriate in the context of the sentence. Find out wrongly spelt or inappropriate word. The number of that word is the answer. If all the words are correctly spelt are appropriate, the answer is 5), i.e. 'All correct'.

86. Every **single** (1) decision will be **reviewed** (2) at the **regular** (3) **monthly** (4) meeting. All correct (5)

87. We **often** (1) ask our customers to give us their **opinion** (2) and **suggestions** (3) for **improvement** (4). All correct (5)

88. I tried to **convince** (1) him that the **situation** (2) was no **worse** (3) as it **appeared** (4). All correct (5)

89. **Underneath** (1) the new **law** (2), the managing director will no **longer** (3) be **appointed** (4) by the government. All correct (5)

90. After the meeting, I **discussed** (1) the **issue** (2) with **colleagues** (3) who were very **helpful** (4). All correct (5)

**Directions (Q. 91-95): In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, five words are suggested, one of which fits the blank appropriately. Find out the appropriate word in each case.**

The growth story in any developing country cannot be (91) without (92) its impact on the poverty and employment situation. The Planning Commission has (93) that India should strive for more inclusive growth'. The number of people living below the poverty line has (94) from 36 per cent in 1993-94 to 22.0 per cent in 2004-05. Again, the issue is to bring more and more people out of poverty by (95) them productive employment opportunities. The Approach Paper to 11th Five Year Plan suggests that doubling the growth of agricultural GDP to 4 per cent per annum will (96) rural employment conditions, by raising real wages and reducing underemployment. However, even if this is attained, an overall growth of 9 per cent will further increase income (97) between agricultural and non-agricultural households, (98) around 10 million workers currently in agriculture find remunerative non-agricultural employment. This (99) a major challenge not only in terms of generating non-agriculture employment but also in (100) its required location and type.

91. 1) completed      2) retold      3) achieved      4) constructed      5) narrated

92. 1) generating      2) assessing      3) realising      4) counting      5) finding

93. 1) desired      2) estimated      3) focused      4) verified      5) stressed

94. 1) uplifted      2) degraded      3) vanished      4) decreased      5) enhanced

95. 1) absolving      2) providing      3) nurturing      4) ignoring      5) refusing

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**Directions (Q. 96-100):** Find the wrong number in the following series.

96. 40 326 2946 29418 323607

- 1) 326                    2) 40  
3) 2946                    4) 323607                    5) 29418

97. 560 1089 1725 2443 3284 4245

- 1) 2443                    2) 1725  
3) 4245                    4) 3284                    5) 560

98. 3252 3080 2958 2876 2826

- 1) 3080                    2) 2876  
3) 2826                    4) 3252                    5) 2958

99. 2442 1222 614 312 163 90 55.75

- 1) 1222 2) 312  
3) 90                    4) 614                    5) 163

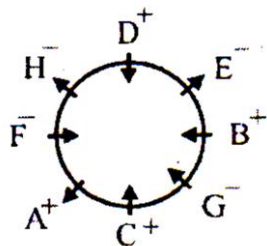
100. 1250 1322 1452 1674 2024 2544

- 1) 1322                    2) 1674  
3) 2544                    4) 2024                    5) 1250

## SOLUTION OF IBPS PO Prelims Set – 8

### (REASONING)

(1-7):



+ represents a male  
- represents a female

1. 1;                    2. 2; F and A  
3. 1;                    4. 2;

5. c) 309



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$$7 \times 1 - 2 = 5$$

$$5 \times 2 - 3 = 7$$

$$7 \times 3 - 4 = 17$$

$$17 \times 4 - 5 = 63$$

$$63 \times 5 - 6 = 309$$

6. a) 52

$$50..50 + (1^3+1) = 52$$

$$52 + (2^3+1) = 61.$$

$$61 + (3^3+1) = 89$$

$$89 + (4^3+1) = 154$$

$$154 + (5^3+1) = 280$$

.

7. 4;

**(8-12):**

8. 5;  $A \geq B = C < D \leq E$

**I.**  $D > A$  is not true.

**II.**  $E > C$  is true.

9. 5; Split them as  $L > U$  ..... (i);

$U \geq K$  ... (ii);  $Z < U$ ..... (iii) and  $U < R$  ... (iv).

Combining (i) and (iii), we get  $L > U > Z$  or

$L > Z$ . Hence **I** follow.

Combining (ii) and (iv), we get  $K \leq U < R$  or

$K < R$ . Hence **II** follows.

10. 1;  $Y < J = P \geq R > I$

**I.**  $J > I$  is true.

**II.**  $Y < R$  is not true.

11. 4;  $V \geq K > M = N > S$

$K > T$

**I.**  $T < N$  is not true.

**II.**  $V = S$  is false.

12. 1; Split them as  $F \leq X$  ... (i);  $X < A$  ... (ii);  $R < X$  ... (iii) and  $X \leq E$  ... (iv).

Combining (i) and (iv), we get  $F \leq X \leq E$  or  $F \leq E$ .

Hence **I** follow.

From (i) and (iii).  $R$  and  $F$  can't be compared. Hence **II** does not follow.

**(13-17):**

Monday	A
Tuesday	E

## IBPS PO Pre (2016) - Model Paper 1

Wednesday	B
Thursday	C
Friday	F
Saturday	D

13. 3;                      14. 2;                      15. 5; Thursday                      16. 1  
 17. 1;

18. 4; **Using Statement I:**

a letter → '71'

**Using statement II:**

'in' → '4'

**Using both:**

'Greek' → '5' and 'received' → '3'

Code for, 'letter', cannot be found even by using both statements together.

19. 5; **Using Statement I:**

A C B D

Position of E cannot be found: it can be left of A or right of D.

**Using Statement II:**

Many seating arrangements are possible.

**Using both:**

E A C B D is the unique arrangement that is possible and C sits in the middle.

20. 4; **Using Statement I:**

We get two arrangements, i.e.

5 → B	E	
4 → A	C	
3 → D	or	B
2 → C	A	
1 → E	D	

**Using Statement II:**

Many arrangements are possible.

21. 3; **Using Statement I:**

From the line "Yasir sits on the immediate right of Abhay as well as Kavita" we can conclude that one of Abhay and Kavita is facing towards the centre and the other outside. So, all friends are NOT facing the centre.

**Using Statement II:**

From the line "Abhay sits on the immediate right of Prashant as well as Yasir" we can conclude that one of Prashant and Yasir is facing towards the centre and the other outside. So, all friends are NOT facing the centre.

## IBPS PO Pre (2016) - Model Paper 1

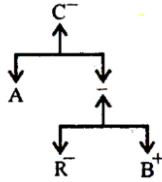
22. 5; **Using Statement I:**

C is not in the statement. So using I only we can never find the relation between Rand C.

**Using Statement II:**

R is not in the statement. So using II only we can never find the relation between R and C.

**Using both:**



We can conclude that R is the grandfather of c.

23. 2; All gliders are parachutes + No parachute is an airplane =  $A + E = E =$  No glider is an airplane + All airplanes are helicopters =  $E + A = O^* =$  Some helicopters are Hence I does not follow. No parachute is an airplanes + All airplanes are helicopter =  $E + A = O^* =$  Some helicopters are not parachutes. That leaves us with the possibility of II.

24. 5; I follows (see above). Again, we get Some helicopters are not gliders. That leaves us with the possibility of II.

25. 1; There are not negative statements.

26. 2; Some metals are papers + All papers are glass =  $I + A = I =$  Some metals are glasses  $\rightarrow$  conversion  $\rightarrow$  Some glasses metals (I).

27. 1; No stone is metal + Some metals are glasses =  $E + I = O^* =$  Some glasses are not stones. That still leaves us with the possibility in conclusion I. No stone is metal + Some metals are papers =  $E + I = O^* =$  Some papers are not stones. Hence, II does not follow.

28. 2; **Input:** train 5947 25 over burden 63 sky  
**Step I :** burden train 59 47 25 over 63 sky  
**Step II :** burden 25 train 59 47 over 63 sky  
**Step III:** burden 25 over train 59 47 63 sky  
**Step IV:** burden 25 over 47 train 59 63 sky  
**Step V :** burden 25 over 47 sky train 59 63  
**Step VI:** burden 25 over 47 sky 59 train 63  
 Hence step V is the last but one.

29. 5; **Input:** service 46 58 96 over there desk 15  
**Step I :** desk service 46 58 96 over there 15  
**Step II :** desk 15 service 46 58 96 over there  
**Step III:** desk 15 over service 46 58 96 there  
**Step IV:** desk 15 over 46 service 58 96 there  
**Step V :** desk 15 over 46 service 58 there 96  
 Since the input is already arranged, there will be no step VI.

## IBPS PO Pre (2016) - Model Paper 1

30. 4; We can't proceed backward.
31. 4; **Step III** : art 24 day 83 71 54 star power  
**Step IV**: art 24 day 54 83 71 star power  
**Step V** : art 24 day 54 power 83 71 star  
**Step VI**: art 24 day 54 power 71 83 star  
**Step VII**: art 24 day 54 power 71 star 83
32. 3; **Step II**: cold 17 wave 69 never desk 52 43  
**Step III**: cold 17 desk wave 69 never 52 43  
**Step IV**: cold 17 desk 43 wave 69 never 52  
**Step V** : cold 17 desk 43 never wave 69 52  
**Step VI**: cold 17 desk 43 never 52 wave 69  
Hence  $6 - 2 = 4$  more steps will be required.
33. 3; The given number: 8  $\boxed{2}$  4 7  $\boxed{5}$  3 1  
In ascending order: 1  $\boxed{2}$  3 4  $\boxed{5}$  7 8
34. 3;  $R > P, T \dots\dots$  (i);  $T > Q \dots\dots$  (ii); S not highest  $\dots\dots$  (iii)
35. 1; R = 16<sup>th</sup> from the right  
 $\therefore W = (16 - 5) = 11^{\text{th}}$  from the right.
36. National journals uploaded A in the year 2001 =  $924 \times \frac{4}{11}$   
= 336  
National journals uploaded D in the year 2001 =  $806 \times \frac{8}{13}$   
= 496  
Avg of A & D =  $(336 + 496) / 2 = 416$   
International journals uploaded in C in the year 2001 =  $918 \times \frac{17}{27}$   
= 578  
Required percentage =  $(416 / 578) = 71.97 \approx 72$
37. (both national and international) uploaded by digital libraries C and E together 2001 =  $918 + 792$   
= 1710  
(both national and international) uploaded by digital libraries D and E together in 2002 = 1620  
Ratio = 1710 : 1620  
19 : 18
38. uploaded by digital library E in 2001 were related to Sociology =  $792 \times \frac{25}{100} = 198$   
If 100 journals are national are related sociology In the year 2001  
International journals uploaded related to sociology =  $198 - 100$   
= 98
39. international uploaded by digital libraries D in the year 2002 =  $585 \times \frac{5}{9}$   
= 325  
D had to purchase 80% of international journals in the year 2002 =  $325 \times \frac{80}{100} = 260$

## IBPS PO Pre (2016) - Model Paper 1

The cost each journal is=396

Total cost=396×260=102960

40. total number of International journals uploaded by all the given digital libraries in 2001  
 $= (924 \times 7/11 + 836 \times 6/19 + 918 \times 17/27 + 806 \times 5/13 + 792 \times 7/18)$   
 $= 2048$

41. Selling price = 32,000+4000=36,000  
% of Profit = 4000/36000 = 12.5%

42. HTC mobile Selling Price = 33,000

HTC Mobile % Of Profit = 10%

means 33,000 ----- 110%

? ----- 100% (CP)

Cost Price of HTC = 30,000

Micromax cost price =  $3/5 * 30,000 = 18,000$

Selling price = 22,000

profit = 4,000

% of profit =  $(4000/18,000) * 100 = 22 \frac{2}{9}\%$

43. Profit on Samsung mobile =3,500

from that profit on LG mobile = 3500+500=4000

Selling Price of LG mobile = 32,000

% of profit on LG =  $(4000/28,000) * 100 = 14 \frac{2}{7}\%$

44. Cost Price = 53,000

% of profit = 14%

53,000 ----- 100%

? ----- 114%

Selling price = 60,420

profit = 60,420-53,000=7420

45. Cost Price = 35,000

Selling Price = 35,000+3500=38500

Ratio = 35000 : 38500 = 10:11

46. 5; Total number of notebooks sold in two weeks =  $2 \times 7 \times 10 = 140$

Total commission earned on selling of notebooks

$$= 140 \times 457 \times \frac{4}{100} = \text{Rs. } 2559.2$$

Similarly, commission earned on selling of pencils.

$$= 2 \times 7 \times 6 \times 80 \times \frac{20}{100} = \text{Rs. } 1344$$

Total commission earned = 2559.2 + 1344

= Rs. 3903.2  $\approx$  3900

## IBPS PO Pre (2016) - Model Paper 1

47. 1; Speed of train A =  $\frac{240}{20} = 12m/s$

In 50 seconds, the train covers  $50 \times 12 = 600$  m.

Length of train B =  $600 - 240 = 360$  metres.

48. 5; 40% minimum passing marks for boys =  $483 + 117 = 600$

$$\Rightarrow 1\% = \frac{600}{40}$$

$$\Rightarrow 100\% = \frac{600}{40} \times 100 = 1500$$

Minimum passing marks for girls

$$= 35\% \text{ of } 1500 = 35 \times 15 = 525$$

49. 4; 12% of K = 16% of N

K → Kaushal's monthly salary

N → Nandini's monthly salary

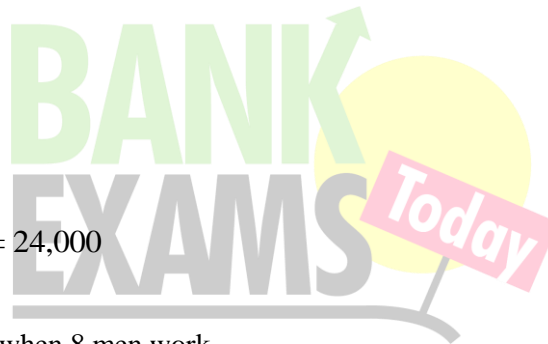
S → Suresh's monthly salary

$$S = \frac{N}{2} \Rightarrow N = 2S$$

$$K = \frac{16}{12} \times N = \frac{16}{25} \times 2S$$

$$= \frac{16}{6} \times \frac{1.08}{12}$$

$$= \frac{16}{6} \times 0.09 = 0.24 \text{ lakh} = 24,000$$



50. 1; The work takes 20 days when 8 men work,

In 1 day,  $20 \times 8 = 160$  men are required to finish the work.

Similarly,

In 1 day,  $32 \times 8 = 256$  women are required to finish the work.

$$\text{So, } 20 \times 8m = 32 \times 8w$$

$$\Rightarrow 1m = \frac{8}{5}w$$

$$\Rightarrow 5m = 8w$$

$$5m + 8w = 8 + 8w = 16w$$

$$\text{Days required to finish the job when 16 women work} = \frac{32 \times 8}{16} = 16$$

51. Cost of production (A + B) by X2 = (15% of 75) crores

Cost of production of medicine A by X2 =  $\frac{2}{5}$  of (15% of 75) crores

$$= 4.5 \text{ crores}$$

Similarly, cost of production of medicine A by X6 =  $\frac{3}{8}$  of (8% of 75) crores

## IBPS PO Pre (2016) - Model Paper 1

$$= 2.25 \text{ crores}$$

$$\text{Required Ratio} = 4.5 / 2.25 = 2:1$$

52. Cost of production of medicine A by company X2 =  $[2/5 \text{ of } (15\% \text{ of } 75)]$  crores

$$= 4.5 \text{ crores}$$

Cost of production of medicine B by company X1 =  $[2/5 \text{ of } (11\% \text{ of } 75)]$  crores

$$= 3.3 \text{ crores}$$

$$\Rightarrow \text{Total cost} = (4.5 + 3.3) \text{ crores} = 7.8 \text{ crores}$$

53. Cost of production of medicine B by company X3 =  $[2/3 \text{ of } (12\% \text{ of } 75)]$  crores

$$= 6 \text{ crores}$$

Cost of production of medicine B by company X4 =  $[4/5 \text{ of } (5\% \text{ of } 75)]$  crores

$$= 3 \text{ crores}$$

$$\Rightarrow \text{Total cost} = (6 + 3) \text{ crores} = 9 \text{ crores}$$

54. Profit earned by Company X3 for medicine A

$$= \{30\% \text{ of } [1/3 \text{ of } (12\% \text{ of } 75)]\} \text{ crores} = 0.90 \text{ crores}$$

Profit earned by Company X3 for medicine B

$$= \{24\% \text{ of } [2/3 \text{ of } (12\% \text{ of } 75)]\} \text{ crores} = 1.44 \text{ crores}$$

Total profit earned by Company X3 =  $(0.90 + 1.44)$  crores

$$= 2.34 \text{ crores}$$

55. Profit earned by Company X5 for medicine A

$$= [28\% \text{ of } \{5/8 \text{ of } (27\% \text{ of } 75)\}] \text{ crores} = 3.54 \text{ crores}$$

Profit earned by Company X7 for medicine B

$$= [22\% \text{ of } \{1/5 \text{ of } (22\% \text{ of } 75)\}] \text{ crores} = 0.73 \text{ crores}$$

Total profit =  $(3.54 + 0.73)$  crores = 4.27 crores

56. distance between destinations IV and V=162

distance between destinations VII and VIII=182

ratio is 162 : 182  $\Rightarrow$  81:91

57.  $t = \text{distance b/w IV and V} / \text{speed}$

$$= 162 / 18 = 9 \text{ hrs}$$

$t = \text{distance b/w V and VI} / \text{speed}$

$$= 312 / 60 = 5 \frac{1}{5} \text{ hrs}$$

## IBPS PO Pre (2016) - Model Paper 1

Avg speed= total dis/total time  
=474/(9+5 1/5)  
=38.85  
Approximately 39 kmph

58.  $t = (\text{total distance I to V}) / (\text{sum of speeds of A\&D})$   
total dis=(188+254+228+162)=832 km  
D 's speed=162/6=27 kmph  
total speeds=77+27=104 kmph  
time taken by they meet=832/104= 8 hrs  
that means they at 1 pm (5 am +8 hrs=1pm)

59. Total distance b\w =188+254+228+162+312+146+182  
=1472 km  
B's speed=254/ 5 12/23  
=254×23/127  
=46 kmph  
Time taken by B to travel I to VIII=1472/46=32 hrs

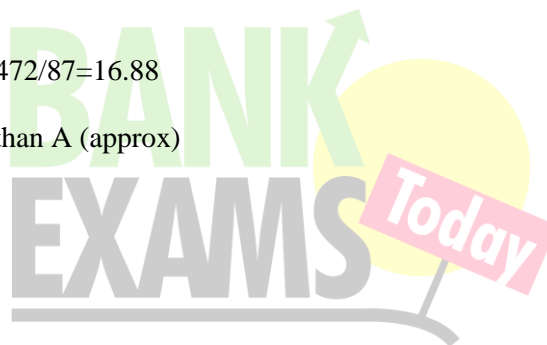
60. Total distance I to VIII =1472  
Time taken by to reach I to VIII= 1472/77=19.11  
=19  
H's speed =77+10=87  
Time taken by to reach I to VIII=1472/87=16.88  
=17  
So H reach destination 2 hrs early than A (approx)

61. 4; I.  $x^2 - 19x + 84 = 0$   
 $x^2 - 7x - 12x + 84 = 0$   
 $(x-7)(x-12) = 0$   
 $x = 7, 12$

II.  $y^2 - 25y + 156 = 0$   
 $y^2 - 13y - 12y + 156 = 0$   
 $(y-13)(y-12) = 0$   
 $\therefore x \leq y$

62. 2; I.  $x^2 - 468 = 1729$   
 $x^2 = 2197$   
 $\therefore x = 13$   
II.  $y^2 - 1733 + 1564$   
 $y^2 = 169$   
 $y = \pm 13$   
 $\therefore x \geq y$

63. 5; I.  $\frac{9}{\sqrt{x}} + \frac{18}{\sqrt{x}} = \sqrt{x}$





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$$9 + 19 = \sqrt{x} \times \sqrt{x}$$

$$\therefore x = 28$$

$$\text{II. } y^2 - \frac{(2 \times 14)^{1/2}}{\sqrt{y}} = 0$$

$$y^2 \sqrt{y} - (2 \times 14)^{1/2} = 0$$

$$y^{11/2} = (2 \times 14)^{1/2}$$

$$\therefore y = 2 \times 14 = 28$$

$$\therefore x = y$$

64. I;  $\sqrt{784}x + 1234 = 1486$

$$\sqrt{784}x = 252$$

$$28x = 252$$

$$\therefore x = 9$$

II.  $\sqrt{1089}y + 2081 = 2345$

$$33y = 264$$

$$\therefore y = 8$$

$$\therefore x > y$$

65. I;  $\frac{12}{\sqrt{x}} - \frac{23}{\sqrt{x}} = 5\sqrt{x}$

$$12 - 23 = 5\sqrt{x} \times \sqrt{x}$$

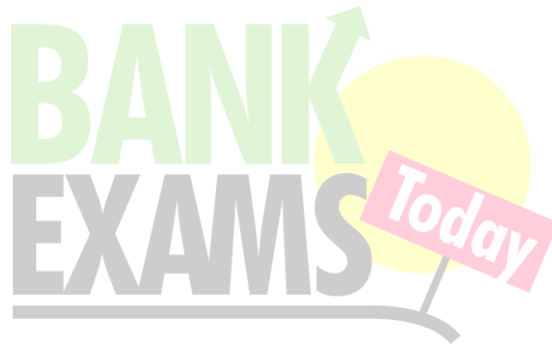
$$\therefore x = -\frac{11}{58} = -2.2$$

II.  $\frac{\sqrt{y}}{12} - \frac{5\sqrt{y}}{12} = \frac{1}{\sqrt{y}}$

$$= \sqrt{y} \left( \frac{1}{12} - \frac{5}{12} \right) = \frac{1}{\sqrt{y}}$$

$$y \left( -\frac{4}{12} \right) = 1$$

$$\therefore y = \frac{-12}{4} = -3$$



(66-70): **British passengers:**  $\frac{1200 \times 18}{100} = 216$

**Females :**  $\frac{216}{4} = 54$

**Males :**  $216 - 54 = 162$

Passengers from Madagascar:  $\frac{1200 \times 6}{100} = 72 = \text{Males}$

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Passengers from South Africa:  $1200 \times \frac{2}{5} = 480$

Males = 240 and Females = 240

Indian Passengers:  $1200 - 216 - 72 - 480 = 432$

Females =  $432 \times \frac{2}{3} = 288$

Males =  $432 - 288 = 144$

66. 2; Required ratio =  $72 : 240 : 432 = 3 : 10 : 18$

67. 1; Required percentage =  $\frac{240}{216} \times 100 = 111$

68. 1; Average number of male passengers  
 $= \frac{162 + 72 + 240 + 144}{4} = \frac{618}{4} = 154.5$

69. 4; Required difference =  $144 - 72 = 72$

70. 5; Total number of male passengers from Britain and female passengers from India together.  
 $= 162 + 288 = 450$

- |   |       |       |       |       |
|---|-------|-------|-------|-------|
| 71. 5                                     | 72. 3 | 73. 3 | 74. 5 | 75. 2 |
| 76. 3                                     | 77. 3 | 78. 4 | 79. 5 | 80. 2 |
| 81. 4                                     | 82. 2 | 83. 1 | 84. 4 | 85. 3 |
| 86. 2; The correct spelling is 'reviewed' |       |       |       |       |
| 87. 5; 88. 3; Replace 'worse' by 'bad'    |       |       |       |       |
| 89. 1; Replace 'underneath' by 'under'    |       |       |       |       |
| 90. 5;                                    |       |       |       |       |
| 91. 1                                     | 92. 2 | 93. 5 | 94. 4 | 95. 2 |

96. 2946  
 $40 \times 8 + 6 = 326$   
 $326 \times 9 + 7 = 294$   
 $2946 \times 10 + 8 = 29418$   
 $29418 \times 11 + 9 = 323607$

97. 1725  
the difference between numbers is  $+23^2, +25^2, +27^2, +29^2, \dots$

98. 3252  
the difference between numbers is  $-(13^2+1), -(11^2+1), -(9^2+1), -(7^2+1), -(5^2+1)$

99. 90

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$$2442/2 + 1 = 1222$$

$$1222/2 + 3 = 614$$

$$614/2 + 5 = 312$$

$$312/2 + 7 = 163$$

$$163/2 + 9 = 89.5$$

$$89.5/2 + 11 = 55.75$$

100 1250

the difference between numbers is  $+(3^3+3)$ ,  $+(4^3+4)$ ,  $+(5^3+5)$ ,  $+(6^3+6)$ ,  $+(7^3+7)$ ,  
 $+(8^3+8)$

