

# SBI PO ( PRELIMINARY EXAM) , 03-07-2016- PREVIOUS YEAR PAPER

## ENGLISH LANGUAGE

**Directions (1-5) :** Rearrange the given six sentences/group of sentences (A), (B), (C), (D), (E) and (F) in a proper sequence, so as to form a meaningful paragraph and then answer the given questions.

- A. Apart from these, the care provided in these facilities is also not up to the mark.  
B. For instance, in 2015, there was one government hospital bed for every 1,833 people compared with 2,336 persons in decade earlier which is a good sign.  
C. India has made strides in the expansion of public services.  
D. For example, six out of every ten hospitals in the less developed States did not provide intensive care and a quarter of them struggled with issues like sanitation and drainage.  
E. For instance, there is one government hospital bed for every 614 people in Goa compared with one every 8,789 people in Bihar.  
F. However, as Lancet points out, this availability of beds has been inequitably distributed within the country.

1. Which of the following should be the FIRST sentence after rearrangement ?

- (1) A
- (2) C
- (3) B
- (4) F
- (5) E

**Solution : 2**

2. Which of the following should be the FIFTH sentence after rearrangement ?

- (1) A
- (2) D
- (3) E
- (4) F
- (5) C

**Solution : 2**

3. Which of the following should be the SECOND sentence after rearrangement ?
- (1) A
  - (2) B
  - (3) F
  - (4) D
  - (5) E

**Solution : 2**

4. Which of the following should be the FOURTH sentence after rearrangement ?
- (1) E
  - (2) B
  - (3) C
  - (4) F
  - (5) D

**Solution : 1**

5. Which of the following should be the SIXTH (LAST) sentence after rearrangement ?
- (1) C
  - (2) B
  - (3) A
  - (4) D
  - (5) F

**Solution : 3**

**Directions (6-15) :** Read the following passage carefully and answer the questions. Certain words/phrases are given in bold to help you locate them while answering some of the questions.

Most of the declarations of the Fourth World Conference on Women in Beijing in 1995 have faded from memory. But the linkage made there between women's rights and poverty and the assumption that discrimination actually impedes progress-has survived. Since then the promotion of equal rights has become a central economic priority for international aid agencies. The World Bank has declared the enfranchisement of women. the single most important issue for effective development. A sweeping statement, perhaps, but since 1805 the bank has lent billions of dollars on programmes that encourage, girls' education, better maternal health and on micro-credit initiatives that funnel money directly into the hands of women. This is a substantial sum dedicated to women. If not, most developing countries, women produce more food than men

and bear primary responsibility for feeding, sheltering and educating the young. But lack of education coupled with social customs which treat women as second-class citizens restrict their participation in the economy. The figures are starting. Globally those women who do work are concentrated at the bottom end of the labour market and receive far less pay. A significant proportion of the world's illiterate are women and women account for half of all refugees.

Anything that helps women catch up with men should be welcomed on grounds of equity alone. But fairer treatment of women is also one of the most effective ways to improve an economy's efficiency as well. It is widely recognised educating more women in developing countries and specifically making education available to men and women equally is likely to raise the productive potential of an economy significantly. As education levels rise, so do household incomes. In Sub-Saharan Africa, for instance, 70% of young children whose mothers have secondary education receive their vaccinations, as opposed to just 30% of those whose mothers have no formal schooling at all. A cross-country analysis concluded that gains in women's education made the single largest contribution to declines in malnutrition in 13 countries between 1970 and 1995. Some researchers reckon that, if female farmers in places like Cameroon or Kenya were afforded the same schooling and other opportunities as male farmers, crop yields would rise quite hefty.

One economic analysis estimates that, if countries in South Asia, Africa and the Middle East had closed the gender gap in schooling at the same rate as East Asia after 1960. Income per head could have grown substantially over the actual growth rates achieved. But one country's gender bias is another's ancient tradition, entrenched in laws and institutions. Some South American Countries, like Bolivia and Guatemala restrict wives employment outside the home in South African nations like Botswana, women have no independent right to manage of own land but now girls are offered stipends for secondary education- a long standing programme now holstered by multilateral aid. Elsewhere in Africa in Ghana, peripatetic bankers act as lenders and financial advisors, often helping women as particular to set up small businesses. Part of the rationale for micro-finance (small icons) that caters to women is that some studies have shown women tend to spend money more prudently on vital goods and services that benefit families, men often squander it. This finding may seem implausible to many men. Not many women would be surprised.

6. Which of the following is an appropriate title for the passage ?
- (1) Enabling Asia- The Long Road Ahead
  - (2) Catching Lip with Africa
  - (3) Raising Children in the 21st Century
  - (4) Poverty-A Matter of Geography ?

(5) Gender Fairness Equals Economic Development

**Solution : 5**

7. Which of the following is/are (a) hindrance(s) in the economic development of the countries mentioned in the passage ?

- A. Time-honoured traditions in these countries
- B. Women's limited access to education
- C. Population explosion in the 1960s

- (1) Only (A)
- (2) Only (B)
- (3) All (A), (B) and (C)
- (4) Both (A) and (C)
- (5) Both (A) and (B)

**Solution : 5**

8. What do the statistics in the passage indicate ?

- (1) The female infanticide rate in African countries has dropped significantly.
- (2) Maternal health and life expectancy of women has improved since 1995.
- (3) Education of mothers has improved health and immunisation in Sub-Saharan Africa.
- (4) Much of the World Bank aid for health has been utilised effectively.
- (5) Economic development in Africa is on the rise.

**Solution : 2**

9. Which of the following best describes the author's opinion regarding international aid efforts ?

- (1) These have been ineffective on account of rampant corruption in aided countries.
- (2) Aid will soon dry up as donors are facing economic troubles of their own.
- (3) Aid should be withdrawn from countries which do not promote equal opportunities.
- (4) The goals are unrealistic as many of aided countries are facing political conflicts.
- (5) These are generous but effectiveness is hampered by prevailing local factors.

**Solution : 3**

10. Choose the word/group of words which is most nearly the same in meaning as the word **FADED** given in bold as used in the passage.

- (1) Tainted
- (2) Disappeared
- (3) Darkened

- (4) Drooped
- (5) Deepened

**Solution : 2**

11. Choose the word/group of words which is most nearly the same in meaning as the word **CATERS** given in bold ds used in the passage.

- (1) Is cooked
- (2) Available
- (3) Subjects
- (4) Pampers
- (5) Plans

**Solution : 4**

12. Which of the following is true in the context of the passage ?

- (1) Women in Asia and Africa have access to primary but not higher education.
- (2) International conferences on gender equality have not resulted in any concrete aid and action.
- (3) There has been much focus on the issue of gender equality in the past two decades.
- (4) Over half the women in sub Saharan Africa are illiterate.
- (5) All of the given statements are true in the context of the passage.

**Solution : 3**

13. Choose the word which is most opposite in meaning to the word **FAIRER** given in bold as used in the passage.

- (1) Dimmer
- (2) Mysterious
- (3) Depressing
- (4) Biased
- (5) Dusty

**Solution : 4**

14. Choose the word which is most opposite in meaning to the word **IMPLAUSIBLE** given in bold as used in the passage.

- (1) Questionable
- (2) Open
- (3) Hypocritical
- (4) Credible
- (5) Fake

**Solution : 4**

15. According to the passage, what can be said with regard to Africa ?
- (1) It is struggling to improve the situation with regard to discrimination against women.
  - (2) While cultural attitudes are changing fast, gender equal policies lag behind.
  - (3) Today there is parity between men and women in terms of property rights.
  - (4) Micro-credit programmes here have not enjoyed the same success as they did in Asia.
  - (5) None of the given options can be said.

**Solution : 1**

**Directions (16-20) :** *In these questions, the sentence has two blanks, each blank indicating that something has been omitted. Choose the set of words for the blanks which best fits the meaning of the sentence as a whole.*

16. There is no clear..... as to why so many companies start at the same time with broadly the ..... ideas.
- (1) signal, aloof
  - (2) indication, same
  - (3) explanation, related
  - (4) clues, equal
  - (5) prove, like

**Solution : 2**

17. Everything from our plastic water bottles and cosmetics to our non-stick frying pans,..... chemicals that .....in our bodies.
- (1) has, stays
  - (2) contains, accumulate
  - (3) produces, dissolves
  - (4) have, dilute
  - (5) comprises, harm

**Solution : 2**

18. Doctors-in training..... a lot about the workings of the human body..... medical school and residency.
- (1) acquire, while
  - (2) receives, throughout
  - (3) study, for
  - (4) trained, from

(5) learn, during

**Solution : 5**

19. There is a common .....that runs..... many of these ventures.

(1) fiber, on

(2) cord, by

(3) wired, between

(4) strand, next

(5) thread, through

**Solution : 5**

20. World economic growth, which was anyway ....., will be further dampened .....to Brexit.

(1) stumbling, thank

(2) groom, owing

(3) low, as

(4) sputtering, due

(5) slowed, now

**Solution : 4**

**Directions (21-25) :** In these questions, read the sentence to find out whether there is any grammatical error in it. The error, if any, will be in one part of the sentence. Mark the part with the error as your answer. If there is no error, mark 'No error' as your answer. (Ignore the errors of punctuation, if any).

21. The progress of the southwest monsoon (1)/ is relatively 'slow as it is (2)/ not getting a favourable system (3)/ for move forward. (4) No error (5).

**Solution : 4**

22. Authorities have (1)/ derived requests (2)/ for private hospital care (3)/ to the accuse. (4) No error (5).

**Solution : 4**

23. The drive intended to creating (1)/ an awareness of (2)/ the perks of riding two wheelers (3)/ without a helmet. (4) No error (5).

**Solution : 1**

24. Gold continued its rising streak (1)/ for the fourth straight session (2)/ to reclaim the (3)/

psychologically significant thirty thousand mark. (4) No error (5)

**Solution : 1**

25. The system, which keeps (1)/ a record for personal and professional details (2)/ of all community members, (3)/ was hacked. (4) No error (5)

**Solution : 1**

**Directions (26-30) :** *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/phrases are suggested, one of which fits the blank appropriately. Find out the appropriate word/phrase in each case.*

Technology is the technical ...(26)... people use to ...(27)... their surroundings. It also means knowledge of using tools and machines to do tasks ...(28)... . We use technology to control the world in which we live. Technology is people using knowledge, tools, and systems to make their lives easier and better. People use technology to refine their ability to do work. ...(29)... technology, people communicates better. Technology allows them to make more and better products. Our buildings are better through the use of technology. We travel in more comfort and speed as a ...(30)... of technology. Yes, technology is everywhere and can make life better.

26. (1) data  
(2) manpower  
(3) sound  
(4) humans  
(5) means

**Solution : 5**

27. (1) relate  
(2) capture  
(3) improve  
(4) grow  
(5) built

**Solution : 3**

28. (1) locally  
(2) centrally  
(3) efficiently



- (4) deeply
- (5) vaguely

**Solution : 3**

29. (1) Through  
(2) Without  
(3) Since  
(4) Help  
(5) Although

**Solution : 1**

30. (1) source  
(2) result  
(3) matter  
(4) precursor  
(5) fortune

**Solution : 2**



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# QUANTITATIVE APTITUDE

1. The cost price of item B is Rs. 150/- more than the cost price of item A. Item A was sold at a profit of 10% and item B was sold at a loss of 20%. If the respective ratio of selling prices of items A and B is 11 : 12, what is the cost price of item B?
- (1) Rs. 450/-  
(2) Rs. 420/-  
(3) Rs. 400/-  
(4) Rs. 350/-  
(5) Rs. 480/-

**Solution : 1**

(1) : Let the cost price of item A = ₹ x

and the cost price of item B = ₹ (x + 150)

According to question,

$$\frac{x \times \frac{110}{100}}{(x + 150) \times \frac{80}{100}} = \frac{11}{12}$$

$$\frac{11x}{2(x + 150)} = \frac{11}{3}$$

$$3x = 2x + 300$$

$$x = ₹ 300/-$$

∴ Cost price of item B = x + 150 = 300 + 150  
= ₹ 450/-

2. A vessel contains a mixture of milk and water in the respective ratio of 10 : 3. Twenty-six litre of this mixture was taken out and replaced with 8 litre of water. If the resultant respective ratio of milk and water in the mixture was 5 : 2, what was the initial quantity of mixture in the vessel ? (in litre)
- (1) 143  
(2) 182  
(3) 169  
(4) 156  
(5) 130

**Solution : 5**

(5) : Let the quantity of milk =  $10x$   
 and the quantity of water =  $3x$   
 Initial quantity of mixture =  $10x + 3x = 13x$   
 According to question,

$$\frac{10x - 26 \times \frac{10}{13}}{3x - 26 \times \frac{3}{13} + 6} = \frac{5}{2}$$

$$\frac{10x - 20}{3x + 2} = \frac{5}{2}$$

$$20x - 40 = 15x + 10$$

$$5x = 50$$

$$x = 10 \text{ litre}$$

∴ Initial quantity of mixture in the vessel  
 $= 13x = 13 \times 10 = 130 \text{ litre}$

**Directions (3-7) :** What **approximate** value will come in place of the question mark(?) in the given questions ? (You are not expected to calculate the exact value)

3. ? % of  $750.11 \times 34.90 + 6.995 = 3000$

(1) 12

(2) 15

(3) 18

(4) 75

(5) 60

**Solution : 1**

[1] : ? % of  $750.11 \times 34.90 + 6.995 = 3000$

$$\frac{?}{100} \times 750 \times 35 + 7 \approx 3000$$

$$? \times 262.5 \approx 2993$$

$$? \approx 12$$

4.  $815.002 + 29.98 - 53.998 + 3.01^2 = ?$

(1) 820

(2) 880

(3) 840

(4) 800

(5) 750

**Solution : 4**

$$[4] ; 815.002 + 29.98 - 53.998 + 3.01^2 = ?$$

$$815 + 30 - 54 + 9 \approx ?$$

$$854 - 54 \approx ?$$

$$? \approx 800$$

5.  $40.1\%$  of  $360.2 - 59.98\%$  of  $? = 12$

(1) 220

(2) 228

(3) 300

(4) 325

(5) 200

**Solution : 1**

$$[1] ; 40.1\% \text{ of } 360.2 - 59.98\% \text{ of } ? = 12$$

$$\frac{40}{100} \times 360 - \frac{60}{100} \times ? \approx 12$$

$$144 - 12 \approx \frac{6}{10} \times ?$$

$$? \approx \frac{1320}{6}$$

$$? \approx 220$$

6.  $96.894 + 33.002 + 15.02 \times 7.99 = ?$

(1) 180

(2) 200

(3) 250

(4) 169

(5) 170

**Solution : 3**

$$[3] ; 96.894 + 33.002 + 15.02 \times 7.99 = ?$$

$$97 + 33 + 15 \times 8 \approx ?$$

$$130 + 120 \approx ?$$

$$? \approx 250$$

7.  $(42.11 \times 5.006) - \sqrt{7} \times 15.08 = ?$

(1) 250

(2) 150

- (3) 45  
 (4) 200  
 (5) 125

**Solution : 2**

$$\begin{aligned} (2) ; (42.11 \times 5.006) - \sqrt{17} \times 15.08 &= ? \\ 42 \times 5 - \sqrt{16} \times 15 &= ? \\ \therefore 210 - 4 \times 15 &= ? \\ 210 - 60 &= ? \\ \therefore ? &= 150 \end{aligned}$$

8. There are 6 consecutive odd numbers. The difference between the square of the average of the first three numbers and the square of the average of the last three numbers is 288. What is the last odd number ?

- (1) 31  
 (2) 27  
 (3) 29  
 (4) 25  
 (5) 33

**Solution : 3**

(3) ; Let the six consecutive odd numbers are  $x, (x + 2), (x + 4), (x + 6), (x + 8)$  and  $(x + 10)$ .

According to question,

$$\left[ \frac{x + 6 + x + 8 + x + 10}{3} \right]^2 - \left[ \frac{x + x + 2 + x + 4}{3} \right]^2 = 288$$

$$(x + 8)^2 - (x + 2)^2 = 288$$

$$x^2 + 64 + 16x - x^2 - 4 - 4x = 288$$

$$12x = 228$$

$$x = 19$$

$$\therefore \text{Last odd number} = x + 10$$

$$= 19 + 10 = 29$$

9. In a bag, there are 6 red balls and 9 green balls. Two balls are drawn at random, what is the probability that at least one of the balls drawn is red ?

- (1) 29/35  
 (2) 7/15  
 (3) 23/35  
 (4) 2/5  
 (5) 19/35

**Solution : 3**

$$\begin{aligned}
 (3) ; \text{ Required probability} &= \frac{{}^9C_1 \times {}^9C_1 + {}^9C_2}{{}^{13}C_2} \\
 &= \frac{54 + 15}{105} = \frac{69}{105} \\
 &= \frac{23}{35}
 \end{aligned}$$

**Directions (10-14) :** Refer to the bar graph and answer the given questions.  
**Data related to the number of students enrolled for a vocational course in two institutes (A and B) during 5 years**



10. What is the difference between average number of students enrolled in institute A in 2009 and 2010 and that in institute B in 2011 and 2012 ?
- (1) 20
  - (2) 40
  - (3) 30
  - (4) 10
  - (5) 60

**Solution : 2**

$$\begin{aligned}
 (2) ; \text{ Required difference} &= \left[ \frac{170 + 270}{2} \right] - \left[ \frac{160 + 200}{2} \right] \\
 &= 220 - 180 = 40
 \end{aligned}$$

11. If the number of enrolled students in institute A in 2013 is 25% less than that in 2014, how many students were enrolled in Institute A in 2014 ?
- (1) 450
  - (2) 480

- (3) 440
- (4) 460
- (5) 470

**Solution : 3**

$$(3) ; \text{Required students} = 330 \times \frac{100}{75} = 440$$

12. In 2009, 65% of students enrolled in institute B were male. If the respective ratio between number of male students enrolled in institutes A and B in 2009 was 3 : 4, what was the number of male students enrolled in institute A in the same year ?

- (1) 111
- (2) 117
- (3) 123
- (4) 114
- (5) 105

**Solution : 2**

(2) ; Let the number of male students enrolled in institute A in 2009 =  $3x$   
and the number of male students enrolled in institute B in 2009 =  $4x$

According to question,

Number of male students in institute B in 2009

$$= 240 \times \frac{65}{100}$$

$$4x = 156$$

$$x = 39$$

∴ Number of male students in institute A in 2009

$$= 3x = 3 \times 39 = 117$$

13. Number of students enrolled in institute A in 2011 is what percent of that enrolled in institute B in the same year ?

- (1) 50.75%
- (2) 60.25%
- (3) 58.5%
- (4) 54.75%
- (5) 56.25%

**Solution : 5**

$$(5) : \text{Required percentage} = \frac{90}{160} \times 100$$

$$= 56.25\%$$

14. Number of students enrolled in institute B decreased by what percent from 2010 to 2013 ?

- (1)  $41 \frac{2}{3}$   
 (2)  $36 \frac{2}{3}$   
 (3)  $43 \frac{1}{3}$   
 (4)  $29 \frac{1}{3}$   
 (5)

**Solution : 1**

$$(1) : \text{Required percentage} = \frac{360 - 210}{360} \times 100$$

$$= \frac{150}{360} \times 100$$

$$= 41 \frac{2}{3}\%$$

15. A is thrice as efficient as B. A started working and after 4 days he was replaced by B. B then worked for 15 days and left. If A and B together finished 75% of the total work, in how many days B alone can finish the whole work ?

- (1) 27  
 (2) 45  
 (3) 24  
 (4) 36  
 (5) 42

**Solution : 4**

(4) : Let A alone can finish the work in  $x$  days.  
 and B alone can finish the work in  $3x$  days.

According to question,

$$\frac{4}{x} + \frac{15}{3x} = \frac{3}{4}$$

$$\frac{9}{x} = \frac{3}{4}$$

$$x = 12 \text{ days}$$

$\therefore$  The number of days taken by B to complete the work =  $3x = 3 \times 12 = 36$  days



16. Raman invested P for 2 years in scheme A which offered 20% p.a. compound interest (compounded annually). He lent the interest earned from scheme A to Shubh, at the rate of 7.5% p.a. simple interest. If at the end of 2 years, Shubh gave Rs.3,036/- to Raman and thereby repaid the whole amount (actual loan + interest), what is the value of P ?
- (1) Rs. 6,000/-  
 (2) Rs. 5,800/-  
 (3) Rs. 6,800/-  
 (4) Rs. 5,400/-  
 (5) Rs. 6,400/-

**Solution : 1**

(1) : Amount invested by Raman

$$= P \left[ \left( 1 + \frac{20}{100} \right)^2 - 1 \right] = \frac{11P}{25}$$

According to question,

$$\frac{11P \times 7.5 \times 2}{25 \times 100} + \frac{11P}{25} = 3036$$

$$\frac{11P}{25} \left[ \frac{3}{20} + 1 \right] = 3036$$

$$\frac{11P}{25} \times \frac{23}{20} = 3036$$

$$P = \frac{3036 \times 25 \times 20}{11 \times 23}$$

$$= ₹6,000/-$$

**Directions ( 17- 21 ) :** Study the following table carefully and answer the questions.

Coaching institute	Total number of students who have enrolled for the coaching institutes	Percentage of students who have enrolled for the given coaching institutes from different schools			
		P	Q	R	S
A	80	25	20	15	40
B	100	24	33	21	22
C	200	32	20	17	31
D	250	20	10	20	50

**Note :** The coaching institutes have students from only the given four schools.

17. What is the respective ratio between the total number of students who have enrolled for coaching institutes A and C together from school P and the total number of students who have enrolled for the same coaching institutes together from school Q ?
- (1) 9 : 4

- (2) 3 : 1  
 (3) 6 : 5  
 (4) 3 : 2  
 (5) 7 : 2

**Solution : 4**

$$\begin{aligned}
 \text{(4) ; Required ratio} &= \left( 80 \times \frac{25}{100} + 200 \times \frac{32}{100} \right) \\
 &: \left( 80 \times \frac{20}{100} + 200 \times \frac{20}{100} \right) \\
 &= (20 + 64) : (16 + 40) \\
 &= 84 : 56 = 3 : 2
 \end{aligned}$$

18. In coaching institute B, the total number of students who have enrolled from schools P and R together is what percent less than the 'total number of students enrolled from schools Q and S together ?

- (1)  $20 \frac{1}{13}\%$   
 (2)  $17 \frac{3}{11}\%$   
 (3)  $19 \frac{2}{11}\%$   
 (4)  $19 \frac{1}{5}\%$   
 (5)  $16 \frac{2}{5}\%$

**Solution : 3**

$$\begin{aligned}
 \text{(3) ; Required percentage} &= \frac{55 - 45}{55} \times 100 \\
 &= \frac{200}{11} = 18 \frac{2}{11} \%
 \end{aligned}$$

19. What is the average number of students who have enrolled in coaching institutes A, C and D from school R ?

- (1) 32  
 (2) 33  
 (3) 34  
 (4) 31  
 (5) 30

**Solution : 1**

(1) ; Required average

$$\begin{aligned} &= \frac{80 \times \frac{15}{100} + 200 \times \frac{17}{100} + 250 \times \frac{20}{100}}{3} \\ &= \frac{12 + 34 + 50}{3} = \frac{96}{3} = 32 \end{aligned}$$

20. what is the difference between the total number of students who have enrolled from coaching institute A from schools P and S together and the total number of students who have enrolled for coaching institute C from the same school together ?

(1) 78

(2) 64

(3) 38

(4) 74

(5) 67

**Solution : 4**

(4) ; Required difference

$$\begin{aligned} &= \left[ 200 \times \left( \frac{32 + 31}{100} \right) \right] - \left[ 80 \times \left( \frac{25 + 40}{100} \right) \right] \\ &= 126 - 52 = 74 \end{aligned}$$

21. In coaching institute D, 42% are females. If 20% of the total females are from school Q, what is the number of male students from school Q who have enrolled from coaching institute D ?

(1) 5

(2) 7

(3) 6

(4) 3

(5) 4

**Solution : 5**

(5) ; Total number of students who have enrolled from coaching institute D from school Q

$$= 250 \times \frac{10}{100} = 25$$

Number of female students in coaching institute D

$$= 250 \times \frac{42}{100} = 105$$

Number of female students from school Q

$$= 105 \times \frac{20}{100} = 21$$

∴ Number of male students from school Q

$$= 25 - 21 = 4$$

**Directions (22-26) :** In these questions, two equations numbered I and II are given. You have to solve both the equations and mark the appropriate option.

**Give answer :**

- (1) If  $x > y$
- (2) If  $x < y$
- (3) If  $x \geq y$
- (4) If  $x \leq y$
- (5) If  $x = y$  or the relationship cannot be established

22. I.  $x^2 - 11x + 30 = 0$

II.  $2y^2 - 9y + 10 = 0$

**Solution : 1**

(1) ; I.  $x^2 - 11x + 30 = 0$

$$x^2 - 6x - 5x + 30 = 0$$

$$x(x-6) - 5(x-6) = 0$$

$$(x-5)(x-6) = 0$$

$$x = 5, 6$$

II.  $2y^2 - 9y + 10 = 0$

$$2y^2 - 4y - 5y + 10 = 0$$

$$2y(y-2) - 5(y-2) = 0$$

$$(y-2)(2y-5) = 0$$

$$y = 2, \frac{5}{2}$$

∴  $x > y$

23. I.  $15x^2 + 8x + 1 = 0$

II.  $3y^2 + 14y + 8 = 0$

**Solution : 1**

$$\begin{aligned} \text{(1); I. } & 15x^2 + 8x + 1 = 0 \\ & 15x^2 + 5x + 3x + 1 = 0 \\ & 5x(3x + 1) + 1(3x + 1) = 0 \\ & (3x + 1)(5x + 1) = 0 \\ & x = -\frac{1}{3}, -\frac{1}{5} \end{aligned}$$

$$\begin{aligned} \text{II. } & 3y^2 + 14y + 8 = 0 \\ & 3y^2 + 12y + 2y + 8 = 0 \\ & 3y(y + 4) + 2(y + 4) = 0 \\ & (y + 4)(3y + 2) = 0 \\ & y = -4, -\frac{2}{3} \end{aligned}$$

$\therefore x > y$

24. I.  $4x^2 - 17x + 18 = 0$

II.  $2y^2 - 21y + 40 = 0$

**Solution : 2**

$$\begin{aligned} \text{(2); I. } & 4x^2 - 17x + 18 = 0 \\ & 4x^2 - 8x - 9x + 18 = 0 \\ & 4x(x - 2) - 9(x - 2) = 0 \\ & (x - 2)(4x - 9) = 0 \\ & x = 2, \frac{9}{4} \end{aligned}$$

$$\begin{aligned} \text{II. } & 2y^2 - 21y + 40 = 0 \\ & 2y^2 - 16y - 5y + 40 = 0 \\ & 2y(y - 8) - 5(y - 8) = 0 \\ & (y - 8)(2y - 5) = 0 \\ & y = 8, \frac{5}{2} \end{aligned}$$

$\therefore x < y$

25. I.  $6x^2 - 25x + 14 = 0$

II.  $9y^2 - 9y + 2 = 0$

**Solution : 3**

$$\begin{aligned} \text{(3); I. } & 6x^2 - 25x + 14 = 0 \\ & 6x^2 - 21x - 4x + 14 = 0 \\ & 3x(2x - 7) - 2(2x - 7) = 0 \\ & (2x - 7)(3x - 2) = 0 \\ & x = \frac{7}{2}, \frac{2}{3} \end{aligned}$$

$$\begin{aligned} \text{II. } & 9y^2 - 9y + 2 = 0 \\ & 9y^2 - 3y - 6y + 2 = 0 \\ & 3y(3y - 1) - 2(3y - 1) = 0 \\ & (3y - 1)(3y - 2) = 0 \\ & y = \frac{1}{3}, \frac{2}{3} \end{aligned}$$

$\therefore x \geq y$

26. I.  $8x^2 + 25x + 3 = 0$

II.  $2y^2 + 17y + 30 = 0$

**Solution : 1**

(1) : I.  $8x^2 + 25x + 3 = 0$

$$8x^2 + 24x + x + 3 = 0$$

$$8x(x + 3) + 1(x + 3) = 0$$

$$(x + 3)(8x + 1) = 0$$

$$x = -3, -\frac{1}{8}$$

II.  $2y^2 + 17y + 30 = 0$

$$2y^2 + 12y + 5y + 30 = 0$$

$$2y(y + 6) + 5(y + 6) = 0$$

$$(y + 6)(2y + 5) = 0$$

$$y = -6, -\frac{5}{2}$$

$\therefore x > y$

**Directions (27-31) :** What will come in place of question mark (?) in the given number series ?

27. 250 235 205 160 ? 25

(1) 110

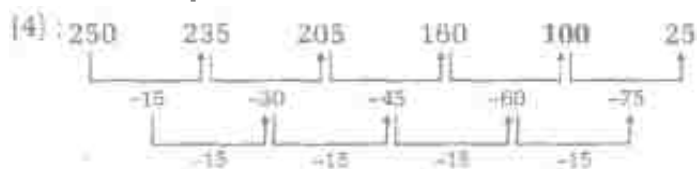
(2) 150

(3) 75

(4) 100

(5) 120

**Solution : 4**



28. 20 ? 29 40 58 85

(1) 23

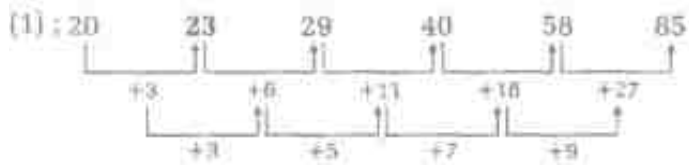
(2) 25

(3) 27

(4) 31

(5) 24

**Solution : 1**



29. 5 7 17 55 225 ?

(1) 971

(2) 1131

(3) 1253

(4) 1435

(5) 956

**Solution : 2**



30. 10 6 8 15 34 ?

(1) 95

(2) 90

(3) 110

(4) 75

(5) 85

**Solution : 2**

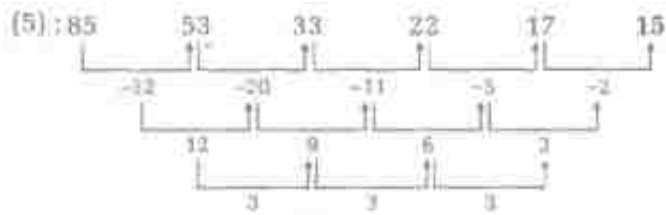


31. 85 53 33 22 17 ?

(1) 5

- (2) 9
- (3) 10
- (4) 8
- (5) 15

**Solution : 5**



32. A started a business by investing Rs. 25,000/-. At the end of 4th month from the start of the business, B joined with Rs.15,000/- and at the end of 6th month from the start of the business, C joined with Rs.20,000/-. If A's share in profit at the end of year was Rs.27,750/-, what was the total profit received?

- (1) Rs.13,950/-
- (2) Rs.13,810/-
- (3) Rs.13,920/-
- (4) Rs.12,780/-
- (5) Rs.14,040/-

**Solution : 1**

(1) ; Ratio of profits of A, B and C

$$= (25000 \times 12) : (15000 \times 8) : (20000 \times 6)$$

$$= 5 : 2 : 2$$

According to question,

$$5x = 7750$$

$$x = ₹ 1,550/-$$

$$\therefore \text{Total profit} = 5x + 2x + 2x = 9x$$

$$= 9 \times 1550 = ₹ 13,950/-$$

33. The respective ratio of radii of two right circular cylinders (A and B) is 3 : 2. The respective ratio of volumes of cylinders A and B is 9 : 7, then what are the heights of cylinders A and B?

- (1) 8 : 5
- (2) 4 : 7
- (3) 7 : 6
- (4) 5 : 4
- (5) 6 : 5

**Solution : 2**



(2) : Let the height of cylinder A =  $h_1$

and the height of cylinder B =  $h_2$ .

According to question,

$$\frac{\pi \times (3)^2 \times h_1}{\pi \times (2)^2 \times h_2} = \frac{9}{7}$$

$$\frac{9h_1}{4h_2} = \frac{9}{7}$$

$$\therefore h_1 : h_2 = 4 : 7$$

34. Surf gave 25% of her monthly salary to her mother. From the remaining salary, she paid 15% towards rent and 25%, she kept aside for her monthly expenses. The remaining amount she kept in bank account. The sum of the amount she kept in bank and that she gave to her mother was Rs.42,000/-. What was her monthly salary ?

(1) Rs.50,000/-

(2) Rs.60,000/-

(3) Rs.65,000/-

(4) Rs.64,000/-

(5) Rs.72,000/-

**Solution : 2**

(2) : Let Suri's monthly salary = ₹  $x$

$$\begin{aligned} \text{Amount she gave to her mother} &= x \times \frac{25}{100} \\ &= \frac{x}{4} \end{aligned}$$

$$\text{Remaining amount} = x - \frac{x}{4} = \frac{3x}{4}$$

Amount she kept in bank account

$$\begin{aligned} &= \frac{3x}{4} \times \frac{60}{100} \\ &= \frac{9x}{20} \end{aligned}$$

According to question,

$$\frac{9x}{20} + \frac{x}{4} = 42000$$

$$\frac{9x + 5x}{20} = 42000$$

$$14x = 42000 \times 20$$

$$x = ₹ 60,000/-$$

35. At present, Ami's age is twice Dio's age and Cami is two years older than Ami. Two years ago, the respective ratio between Rio's age at that time and Cami's age at

that time was 4 : 9. What will be Ami's age four years hence ?

- (1) 40 years
- (2) 30 years
- (3) 42 years
- (4) 36 years
- (5) 48 years

**Solution : 1**

(1) : Let Rio's present age =  $x$  years.

Ami's present age =  $2x$

and Cami's present age =  $2x + 2$

According to question,

$$\frac{x - 2}{2x + 2 - 2} = \frac{4}{9}$$

$$9x - 18 = 8x$$

$$x = 18 \text{ years}$$

Ami's present age =  $2x = 2 \times 18$

$$= 36 \text{ years}$$

$\therefore$  Ami's age after four years =  $36 + 4 = 40$  years

# REASONING

**Directions (1-5) :** In these questions, relationship between different elements is shown in the statements. The statements are followed by conclusions. Study the conclusions based on the given statements and select the appropriate answer.

Give answer :

- (1) If only conclusion I is true.
- (2) If either conclusion I or II is true
- (3) If only conclusion II is true.
- (4) If neither conclusion I nor II is true
- (5) If both conclusions I and II are true.

**1. Statements :**

$G \geq R > O \geq S; Y < O \leq F$

**Conclusions :**

I.  $G > Y$

II.  $S \leq F$

**Solution : 5**

(5) ; **Statements :**  $G \geq R > O \geq S$

$Y < O \leq F$

$G \geq R > O > Y$

$S \leq O \leq F$

**Conclusions :** I.  $G > Y \rightarrow$  True

II.  $S \leq F \rightarrow$  True

**2. Statements :**

$W \geq I = P > E \geq S$

**Conclusions :**

I.  $S < W$

II.  $S = W$

**Solution : 1**

(1) ; **Statements :**  $W \geq I = P > E \geq S$

**Conclusions :** I.  $S < W \rightarrow$  True

II.  $S = W \rightarrow$  False

**3. Statements :**

$R \leq C \leq J = T \leq P > Q \geq H$

**Conclusions :**

I.  $R < P$

II.  $P = R$

**Solution : 2**

(2) : **Statements :**  $R \leq C \leq J = T \leq P > Q \geq H$

**Conclusions :** I.  $R < P$   
II.  $P = R$  } Either I or II

4. **Statements :**

$R \leq O < A \leq M$ ;  $L = D \geq A$

**Conclusions :**

I.  $R < L$

II.  $D > O$

**Solution : 5**

(5) : **Statements :**  $R \leq O < A \leq M$

$L = D \geq A$

$R \leq O < A \leq D = L$

**Conclusions :** I.  $R < L \rightarrow$  True

II.  $D > O \rightarrow$  True

5. **Statements :**

$R \leq C \leq J = T \leq P > Q \geq H$

**Conclusions :**

I.  $H > T$

II.  $C \leq Q$

**Solution : 4**

(4) : **Statements :**  $R \leq C \leq J = T \leq P > Q \geq H$

**Conclusions :** I.  $H > T \rightarrow$  False

II.  $C \leq Q \rightarrow$  False

**Directions (6-11) :** Study the following information and answer the given questions.

Seven people, namely C, D, E, F, G, H and I like different cities namely, Surat, Kolkata, Bangalore, Mumbai, Ranchi, Delhi and Pune. Each of them studies in either of three schools viz. DAS, RIS and VCS with at least two of them in a school. (Note : None of the information given is necessarily in the same order.)

F studies with the one who likes Bangalore in RIS. The one who likes Delhi studies only with H. H does not like Bangalore. C studies with those who like Surat and

Pune. C does not study with F. E studies only with the one who likes Mumbai. The one who likes Mumbai does not study with the one who likes Delhi. More than one person studies with D. D does not like Pune. Both I and the one who likes Ranchi study in the same school but not in DAS. H does not like Ranchi. –

6. Which of the following combinations represents the school in which E studies and the city he likes ?

- (1) DAS-Bangalore
- (2) RIS-Bangalore
- (3) DAS-Kolkata
- (4) VCS Delhi
- (5) RIS-Delhi

**Solution : 2**

**Q. No. 6-11**

School	People	City
DAS	H	Kolkata
	G	Delhi
RIS	F	Mumbai
	E	Bangalore
VCS	C	Ranchi
	D	Surat
	I	Pune

7. Which of the following cities does G like ?

- (1) Pune
- (2) Ranchi
- (3) Mumbai
- (4) Delhi
- (5) Surat

**Solution : 4**

8. Four of the following five are alike in a certain way as per the given arrangement- and hence form a group. Which of the following does not belong to that group

- (1) DF
- (2) CI
- (3) HG

(4) FE

(5) ID

**Solution : 1**

9. Who amongst the following likes Kolkata ?

(1) F

(2) H

(3) I

(4) C

(5) D

**Solution : 2**

10. Which of the following combinations represents the combination of people studying in VCS ?

(1) The one who likes Delhi and Bangalore

(2) The one who likes Ranchi and Mumbai

(3) The one who likes Delhi, Mumbai and Kolkata

(4) The one who likes Pune, Surat and Kolkata

(5) The one who likes Surat, Pune and Ranchi

**Solution : 5**

11. Which , of the following statements is not true ?

(1) F studies in the same school inn which D studies.

(2) Both D and C study in the same school.

(3) G studies with only the one who likes Kolkata.

(4) C likes Ranchi.

(5) All of the given statements are true.

**Solution : 1**

**Directions (12-14) :** Study the following information and answer the given questions.

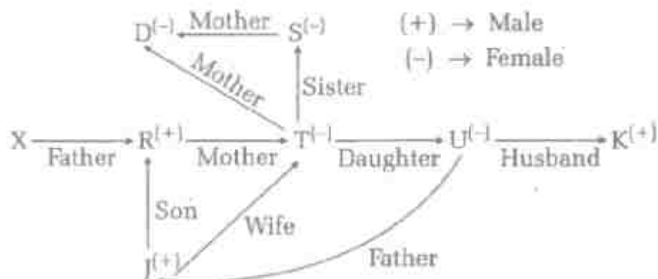
D is the mother of S. S is the sister of T. T is the mother of. R. R is the only son of J. J is the father of U. U is married to K.

12. How is J related to D ?

- (1) Brother-in-law
- (2) Son-in-law
- (3) Grandson
- (4) Son
- (5) Nephew

**Solution : 2**

**Q. No 12-14**



13. If R is the father of X, then how is K related to X ?

- (1) Father
- (2) Aunt
- (3) Uncle
- (4) Father-in-law
- (5) Mother

**Solution : 3**

14. How is S related to R ?

- (1) Sister-in-law
- (2) Mother-in-law
- (3) Grandmother
- (4) Aunt
- (5) Mother

**Solution : 4**

**Directions (15-19) :** Study the given information carefully to answer the given questions.

Seven boxes— J, K, L; M, N, o and P are kept one above the other, but not necessarily in the same order. Each box contains different elements — Cookies, Pencils, Spoons, Diaries, Colours, Jewellery and Watches, but not necessarily in the same order. Only two boxes are kept between M and N. The Pencil box is kept immediately below M. Only two boxes are kept between the Pencil box and the

Watch box. N is kept above the Watch box. The Diary box is kept immediately below the Watch box. Only three boxes are kept between the Diary box and J. The Jewellery box is kept immediately above J. O is kept immediately above K. O is not a Pencil box. P is kept immediately above the Cookie box. Only one box is kept between P and the Spoon box.

15. Which of the following boxes is kept immediately above M ?

- (1) P
- (2) O
- (3) L
- (4) The Diary box
- (5) The Jewellery box

**Solution : 4**

**Q.No 15-19**

Box	Element
N	Colour
O	Watch
K	Diary
M	Spoon
L	Pencil
P	Jewellery
J	Cookie

16. What is the position of O in the given stack of boxes ?

- (1) First from the top
- (2) Second from the top
- (3) Third from the bottom
- (4) Fifth from the bottom
- (5) Fourth from the top

**Solution : 2**

17. Which of the following boxes contains Spoons ?

- (1) Other than those given as options
- (2) K
- (3) M
- (4) N



(5) L

**Solution :** 3

18. Four of the following five are alike in a certain way and hence form a group. Which of the following does not belong to the group ?

- (1) N – Diaries
- (2) P – Spoons
- (3) K – Colours
- (4) L – Pencils
- (5) O – Spoons

**Solution :** 4

19. How many boxes are kept between K and the Watch box ?

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

**Solution :** 2

**Directions (20-24) :** Study the following information to answer the given questions.

Eight Mends — A, B, C, D, L, M, N and O are seated in a straight line, but not necessarily in the same order. Some of them are facing north while some are facing south. Only three people sit to the left of N. B sits second to the right of N. C sits third to the left of O. O is not an immediate neighbour of B. O does not sit at any of the extreme ends of the line.

C and O face same direction (i.e., if C faces north then O also faces north and vice-versa.)

Both the immediate neighbours of

D face north. D does not sit at any of the extreme ends of the line. Person sitting at extreme ends face opposite directions (i.e., if one person faces north then the other faces south and vice-versa.) Both the immediate neighbours of N face same direction (i.e., if one neighbour faces north then the other also faces north and vice-

versa.)

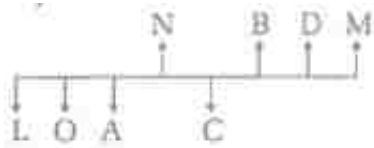
A sits second to the left of L. D faces a direction opposite to L. (i.e. if L faces north then D faces south and vice-versa.)

20. How many people sit exactly between B and o ?

- (1) More than four
- (2) One
- (3) Two
- (4) Four
- (5) Three

**Solution : 5**

**Q. No. 20-24**



21. Who amongst the following represent the immediate neighbours of the persons sitting at the extreme ends of the line ?

- (1) D, O
- (2) C, D
- (3) D, M
- (4) A, L
- (5) A, M

**Solution : 4**

22. Who amongst the following faces north ?

- (1) A
- (2) L
- (3) O
- (4) N
- (5) C

**Solution : 4**

23. Which of the following is true based on the given arrangement ?

- (1) B and C face the same directions.
- (2) None of the given options is true.

- (3) B faces south.
- (4) Only three people face south.
- (5) M sits at one of the extreme ends of the line.

**Solution : 5**

24. Who amongst the following sits second to the right of C ?

- (1) A
- (2) No one as only one person sits to the right of C.
- (3) M
- (4) B
- (5) L

**Solution : 1**

**Directions (25-26) :** Read the following information and answer the given questions.

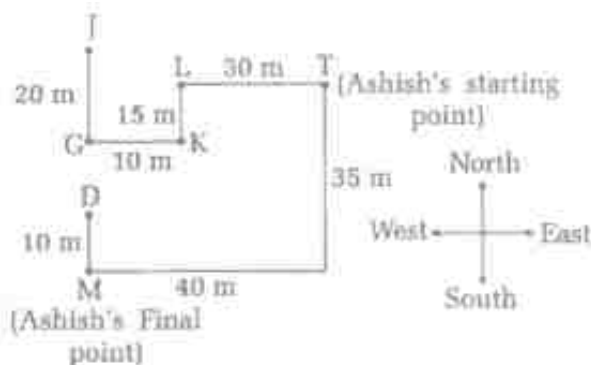
Point J is 20m to the north of Point G. Point G is 10m to the west of Point K. Point K is 15m to the south of Point L. Ashish is standing at Point T which is 30m to the east of Point L. He starts walking towards south and walks for 35m. He takes a right turn and stops at Point M after walking for 40m.

25. How far and in which direction is Point G with respect to Point M ?

- (1) 15m towards South
- (2) 15m towards West
- (3) 20m towards South
- (4) 15m towards North
- (5) 20m towards North

**Solution : 5**

**Q. No 25-26**



26. If Ashish walks for 10m towards north from his final position to reach Point D, how much distance will he have to cover in order to reach Point J ?

- (1) 10 m
- (2) 35 m
- (3) 25 m
- (4) 20m
- (5).30m

**Solution : 3**

**Directions (27-29) :** Read the given information carefully and answer the given questions.

Each of the six friends, I, J, K, L, M and N working in an office handles different number of projects in a month. I handles the second lowest number of projects. K handles more projects than L and M but less than J. J did not handle the maximum number of projects. M did not handle the minimum number of projects. The one who handle the third highest number of projects handled 31 projects. L handled 12 projects.

27. How many projects did j possibly handle –

- (1) 28
- (2) 10
- (3) 36
- (4) 9
- (5) 15

**Solution : 3**

$N > J > K > M > I > L$					
	↓		↓		
	31		12		

28. If the number of projects handled by (I + K) is only thirty-three more than number of projects handled by L, how many projects were handled by I ?

- (1) 22
- (2) 14
- (3) 19
- (4) 9
- (5) 32

**Solution : 2**

29. Which of the following is true regarding the number of projects handled by N ?
- (1) No one handles more projects than N.
  - (2) Only J handled more number of projects than N.
  - (3) N possibly handled 24 projects.
  - (4) N handled more number of projects than only three. people.
  - (5) The difference between projects handled by N and L is less than 18.

**Solution :** 1

**Directions (30-31) :** Study the following information and answer the questions.

Seven people, namely K, L, M, N, o, P and Q have to attend a concert but not necessarily in the same order, on seven different months (of the same year) namely January, February, April, May, June, September and November. Each of them also likes a different movie namely X-Men, Transformers, Frozen, Minions, Shrek, Tangled and Rio but not necessarily in the same order. M will attend a concert in a month which has 31 days. Only two people will attend a concert between M and the one who likes Frozen. The one who likes Frozen will attend a concert on one of the months after M. Only two people will attend a concert between the one who likes Frozen and the one who likes Transformers. The one who likes Transformers will attend a concert in a month which has 31 days. K will attend a concert immediately after M. Only three people will attend a concert between K and the one who likes Tangled. Only one person will attend a concert between the one who likes Tangled and L. Only two people will attend a concert between L and the one who likes Rio. The one who likes X-Men will attend a concert immediately before the one who likes Shrek. Only one person will attend a concert between the one who likes Shrek and P. Only three people will attend a concert between Q and o. Q will not attend a concert in a month which has 30 days.

30. Who amongst the following likes X-Men ?
- (1) M
  - (2) K
  - (3) O
  - (4) L
  - (5) Q

**Solution :** 5

**Q . No 30-35**

Month	Person	Movie
January	P	Tangled
February	Q	X-Men
April	L	Shrek
May	M	Transformers
June	K	Minions
September	O	Rio
November	N	Frozen

31. How many people will attend a concert after M ?

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

**Solution :** 5

32. Which of the following represents the people who will attend a concert immediately before and immediately after Q ?

- (1) M, N
- (2) P, L
- (3) L, N
- (4) P, N
- (5) N, M

**Solution :** 2

33. As per the given arrangement, January is related to Q and May is related to K following a certain pattern, which of the following is April related to following the same pattern ?

- (1) P
- (2) O
- (3) M
- (4) L
- (5) N

**Solution : 3**

34. Which of the following represents the month in which K will attend a concert ?

- (1) September
- (2) June
- (3) November
- (4) April
- (5) Cannot be determined

**Solution : 2**

35. Who amongst the following likes Minions?

- (1) M
- (2) L
- (3) P
- (4) Other than those given as options
- (5) K

**Solution : 5**

