IBPS BANK PO (PRELIMINARY EXAM), 16-10-2016 - PREVIOUS YEAR PAPER

ENGLISH LANGUAGE

Directions (1-7) : **Read the passage carefully and answer the questions given below it.**

Governments looking for easy popularity have frequently been tempted into announcing give-a-ways of all sorts; free electricity, virtually free water, subsidized food, cloth at half price, and so on. The subsidy culture has gone to extremes. The richest farmers in the country get subsidized fertilizers. University education, typically accessed by the wealthier sections, is charged at a fraction of cost. Postal services are subsidized, and so are railway services. Bus fares cannot be raised to economical levels because there will be violent protest, so bus travel is subsidized too. In the past, price control on a variety of items, from steel to cement, meant that industrial consumer of these items got them at less than actual cost, while the losses of the public sector companies that produced them were borne by the taxpayer! A study done a few years ago, came to the conclusion that subsidies in the Indian economy total as much as 14.5 per cent of gross domestic product. At today's level, that would work out to about 1,50,000 crore. And who pay the bill? The theory-and the Political fiction on the basis of I which it is sold to unsuspecting voters-is that subsidies go the poor. and are paid for by the rich. The fact is that most subsidies go the 'rich' (defined in the Indian context as those who are above the poverty line), and much of the tab goes indirectly to the poor. Because the hefty subsidy bill results in fiscal deficits, which in turn push up rates of inflation-which, as everyone knows, hits the poor the hardest of all. That is why taxmen call inflation the most regressive form of taxation.

The entire subsidy system is built on the thesis that people cannot help themselves, therefore governments must do so. That people cannot afford to pay for variety of goods and services, and therefore the government must step in. This thesis has been applied not just in the poor countries but in the rich ones as well; hence the

birth of the welfare state in the west, and an almost Utopian social security system; free medical care, food aid, old age security, et.al. But with the passage of time, most of the wealthy nations have discovered that their economies cannot sustain this social safety net, which in fact reduces the desire among people to pay their own way, and takes away some of the incentive to work, in short, the bill was unaffordable, and their societies were simply not willing to pay. To the regret of many, but because of the laws of economies are harsh, most Western societies have been busy pruning the welfare bill.

In India, the lessons of this experience over several decades, and in many countries-do not seem to have been learnt. Or they are simply ignored in the pursuit of immediate votes. People who are promised cheap food or clothing do not in most cases look beyond the gift horses-to the question of who picks up the tab. The uproar over higher petrol, diesel and cooking gas prices ignored this basic question; if the user of cooking gas does not want to pay for its cost, who should pay? Diesel in the country is subsidised, and if the user of cooking gas does not want to pay for its full cost, who does he or she think should pay the balance of the cost? It is a simple question, nevertheless if remains unasked.

The Deva Gowda government has shown some courage in biting the bullet when it comes to the price of petroleum products. But it has been bitten by much bigger subsidy bug. It wants to offer food at half its cost to everyone below the poverty line, supposedly estimated at some 380 million people. What will be the cost? And of course, who will pick up the tab? The Andhra Pradesh Government has been bankrupted by selling rice as 2 per kg. Should the Central Government be bankrupted too, before facing up to the question of what is affordable and what is not? Already, India is perennially short of power because the subsidy on electricity has bankrupted most electricity boards, and made private investment wary unless it gets all manner of state guarantees. Delhi's subsidised bus fares have bankrupted the Delhi Transport Corporation, whose buses have slowly disappeared from the capital's streets. It is easy to be soft and sentimental, by looking at programmes that will be popular. After all, who does not like a free lunch? But the evidence is surely mounting that the lunch isn't free at all. Somebody is paying the bill. And if you want to know who, take at the country's poor economic performance over the years.

1. Which of the following should not be subsidised over the years ?
   (1) University education
   (2) Postal services
   (3) Steel
   (4) Other than those given as options
   (5) All of the above options

   Solution : 5

2. The statement that 'subsidies are paid by the rich and go to the poor' is
   (1) fiction
   (2) fact
   (3) fact, according to the author
   (4) fiction, according to the author
   (5) Other than those given as options

   Solution : 4

3. Why do you think that the author calls the Western social security system Utopian ?
   (1) The countries belief in the efficacy of the system was bound to turn out to be false.
   (2) The system followed by these countries is the best available in the present context.
   (3) Everything under this system was supposed to be free but people were charging money for them.
   (4) The theory of system followed by these countries was devised by Dr. Utopia.
   (5) All the options are responsible.

   Solution : 1

4. It can be inferred from the passage that the author :
   (1) believes that people can help themselves and do not need the government.
   (2) believes that the theory of helping with subsidy is very destructive.
   (3) believes in democracy and free speech.
   (4) is not a successful politician.
   (5) believes that subsidies are the best way to help poor.

   Solution : 2

5. Which of the following is not a victim of extreme subsidies ?
   (1) The poor
   (2) The Delhi-Transport Corporation
   (3) The Andhra Pradesh Goverment
   (4) Other than those given as options
   (5) The rich

   Solution : 4

6. Which of the following is not true in the context of the passage ?
   (1) Where subsidies are concerned, the poor ultimately pay the tab.
   (2) Inflation is caused by too much subsidies.

(3) Experts call subsidies the most regressive form of taxation.

(4) Fiscal deficits are caused due to heavy subsidy bills.

(5) None of the following is true in the context of the passage.

Solution : 3

7. A suitable title to the passage would be :

(1) There's no such thing as a free lunch

(2) The Economic Overview

(3) Deva Gowda's Government and its Follies

(4) It takes Two to Tango

(5) The Rich and The Poor: Extreme Partiality

Solution : 1

Directions (8-12) : Rearrange the following six sentences (A), (B), (C), (D), (E) and (F) in the proper sequence to form a meaningful paragraph and then answer the questions given below.

A. It is the only country in the world that is carbon negative, which means it produces more oxygen than it consumes.

B. Bhutan, sandwiched between the two most populous nations on Earth, suffers for their sins.

C. So far, so good. But then, two things happened.

D. Carbon sinks, 70% forest cover, powered almost entirely by mountain streams—Bhutan is a poster child for green living.

E. Glaciers are beginning to melt, flash floods and heavy rains—and even droughts— are common, and
temperatures are climbing.

F. One, India and China got richer.

8. Which of the following should be the **FIRST** sentence of the given paragraph ?

(1) E

(2) D

(3) C

(4) B

(5) A

Solution : 2

9. Which of the following should be the **THIRD** sentence of the given paragraph ?

(1) A

(2) B

(3) C

(4) D

(5) E

> Solution : 3

10. Which of the following should be the **LAST** sentence of the given paragraph ?

    (1) A

    (2) D

    (3) C

    (4) B

    (5) E

    > Solution : 5

11. Which of the following should be the **FOURTH** sentence of the given paragraph ?

    (1) F

    (2) C

    (3) B

    (4) E

    (5) D

    > Solution : 1

12. Which of the following should be the **SECOND** sentence of the given paragraph ?

    (1) B

    (2) D

    (3) A

    (4) C

    (5) E

    > Solution : 3

Directions (13-20) : In the following questions, you have a brief passage. In the passage, some of the words have been left out. First read the passage over and try to understand what it is about. Then fill in the blanks with the help of the alternatives given. Big ideas come from tackling **...(13)...** problems. When one is

confronted with an overwhelming task, it's pieces. Business jargon is full of phrases about that, like "pilot projects" and "low-hanging fruit." They have their place, but in the repertory of management **...(14)...** they should share their

place with bold approaches to big challenges. Much of today's most valuable management knowledge came from wrestling with such issues. The most complicated workplace in the middle of the last century was the automobile assembly plant. Drawn to its complexity where Peter F. Drucker, W. Edwards Deming, and Taiichi Ohno, among others. The work they and their disciples did, applied in industry after industry, is the basis of the best that we know about operations, managing people, innovation, organizational design, and much more.

The most complex workplaces are tertiary care hospitals. These vast **...(15)...** employ tens of thousands of people who, under one roof, do everything from neurosurgery to laundry. Each patient – that is to say, each "job" — calls on a different set of people with a different constellation of **...(16)...** even when the two patients have the same diagnosis, success may be **...(17)...** differently. This is complexity of an order of magnitude greater than automobile assembly, and anyone who **...(18)...** hospitalized knows that management has thus far been unequal to the scope of task. The workers, managers, consultants, and scholars **...(19)...** crack this nut will reshape industries and institutions just as **...(20)...** as Drucker, Deming, and Ohno did.

13. (1) small
    (2) big
    (3) irrelevant
    (4) buildings
    (5) minor

    Solution : 2

14. (1) weakness
    (2) strength
    (3) power
    (4) practice
    (5) symptom

    Solution : 4

15. (1) houses
    (2) institute
    (3) demagogue
    (4) forts
    (5) enterprises

    Solution : 5

16. (1) barbarity
    (2) talent
    (3) skills
    (4) unskilled
    (5) barbaric

    Solution : 3

17. (1) managed
    (2) officious
    (3) delivered
    (4) measured
    (5) postponed

    Solution : 4

18. (1) are been
    (2) have being
    (3) have been
    (4) has been
    (5) is be

    Solution : 4

19. (1) who
    (2) whom
    (3) whose
    (4) which
    (5) whomsoever

    Solution : 1

20. (1) profoundly
    (2) gradually
    (3) superficially
    (4) speciously
    (5) earnest

    Solution : 1

Directions (21-30) : Identify the error in the sentences given below, if there is no error, mark option (5).

21. (1) The need to set up
    (2) a good library in the locality
    (3) has been in the minds of people
    (4) for some time now
    (5) No error

    Solution : 3

22. (1) Most people would have
    (2) attended the union meeting
    (3) if they had
    (4) had longer notice of it.
    (5) No error

    Solution : 4

23. (1) He took to
    (2) reading Times
    (3) for better knowledge
    (4) of the facts.
    (5) No error

    Solution : 2

24. (1) The RBI has proposed to introduce
    (2) polymer notes after taking into considering
    (3) the cost and longevity
    (4) associated with their manufacturing.
    (5) No error

    Solution : 2

25. (1) Studies show that the lives of millions of mothers
    (2) and their children could be saved if countries would
    (3) invest in programs that ensures a healthy pregnancy,
    (4) and safe childbirth.
    (5) No error

    Solution : 3

26. (1) Film viewers claim that
    (2) the number of scenes depicting alcohol consumption
    (3) have increased dramatically over
    (4) the last decade.
    (5) No error

Solution : 3

27. (1) Forty percent of the people alive today have
    (2) never made a phone call, but
    (3) thirty percent still have no electricity connections
    (4) to their homes.
    (5) No error

    Solution : 2

28. (1) Workers with less
    (2) personal problems are
    (3) likely to be
    (4) more productive in their work.
    (5) No error

    Solution : 1

29. (1) Everyone who visits Singapore
    (2) is impressed by its cleanliness,
    (3) which is mainly a result of rigorous implementation
    (4) of their strict laws.
    (5) No error

    Solution : 4

30. (1) The bridal dress was
    (2) most unique: the prince
    (3) designed it and his
    (4) mother provided the lace fabric.
    (5) No error

    Solution : 2

QUANTITATIVE APTITUDE

Directions (1-4) : *Study the table carefully and answer the given questions.*

State	Percentage of population below the poverty line	Proportion of males and females	
		Below poverty line	Above poverty line
		M : F	M : F
P	35	5 : 6	6 : 7
Q	25	3 : 5	4 : 5
R	24	1 : 2	2 : 3
S	29	3 : 2	4 : 3
T	15	5 : 3	3 : 3

1. If the male population above poverty line for State R is then what is the total population of
   (1) 4.5 Trillion
   (2) 4.85 million
   (3) 5.33 million
   (4) 6.25 million
   (5) 6 million

   Solution : 4
   (4) Let the male population above poverty line for state R = 2x
   and the female population above poverty line for state R = 3x
   According to question,
   2x = 1.9
   x = 0.95
   Total population above poverty line
   =2x + 3x = 5x
   = 5 × 0. 95
   = 4.75 million
   Now, let the total population of state R = y
   $y \times \frac{79}{100} = 4.75$
   $y = \frac{74.75}{76} \times 100$
   y = 625 million

2. What will be the number of females above poverty line in the State S if it is known that the population of State S is 7 million ?
   (1) 3 million

(2) 2.13 million

(3) 1.33 million

(4) 5.7 million

(5) 4 million

Solution :   2

(2) Total population above poverty line in the state S

$= 7 \times \frac{71}{100}$

= 4.97 million

Number of females above poverty line in state S

$= 4.97 \times \frac{3}{7}$

= 2.13 million

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3. What is the male population above poverty line for State P if the female population below poverty line for State P is 2.1 million ?

   (1) 2.1 million

   (2) 2.7 million

   (3) 3.3 million

   (4) 2.3 million

   (5) 3 million

Solution :   3

(3) Let the total population of state P = x million

Now, let the male population below poverty line for state P = 5y million

and the female population below poverty line for state P = 6 y million

According to question,

6y = 2.1 million

y = 0.35 millionTotal population below poverty line for state P

= 5y+ 6y =11y

= 11 x0.35

= 3.85 million

$x \times \frac{35}{100} = 3.85$

$x \times \frac{3.85 \times 100}{35}$

x =11 millionTotal population above poverty line

=11 x 65 = 7.15 million

∴ Number of males above poverty line

$= 7.15 \times \frac{6}{13}$

= 3.3 million

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4. If the population of males below poverty line for State Q is 2.4 million and that for State T is 6 million, then what is the respective ratio of the total population of states Q and T ?

   (1) 1 : 3

(2) 2 : 5

(3) 3 : 7

(4) 4 : 9

(5) 3 : 9

Solution : 2

(2) Let the total population of state Q = A million

Total male population below poverty line for state Q = 3x

and the total female population below poverty line for state Q = 5xAccording to question,

3x = 2.4

x = 0 8 millionTotal population below poverty line for state Q

=3x + 5x =8x

= 8 x 0.8

= 6.4 million

$A \times \frac{25}{100} = 6.4$

$A = \frac{6.4 \times 100}{25} = 25.6 Million$

Let the total population of state T = B million

Total male population below poverty line for state T = 5y

and the total female population below poverty line for state T = 3yAccording to question,

5 y = 6

y = 1.2 millionTotal population below poverty line for state T = 5y+ 3y =8y

= 8 × 1.2 = 9.6 million

$B \times \frac{15}{100} = 9.6$

B = 64 million

∴ Required ratio $= \frac{A}{B} = \frac{25.6}{64}$

= 2 : 5

5. Find the probability that a number from 1 to 300 is divisible by 3 or 7 ?

(1) $\frac{37}{75}$

(2) $\frac{32}{75}$

(3) $\frac{36}{75}$

(4) $\frac{28}{75}$

(5) $\frac{26}{75}$

Solution : 2

(2) Total number of integers = 300

Integers divisible by 3 = 100

Integers divisible by 7 = 42

Integers divisible by 21 = 14

Total numbers divisible by 3 or 7 = 100 + 42 -14 = 128

Required probability = $= \frac{128}{300} = \frac{32}{75}$

6. 14 men can do a work in 18 days, 15 women can do a work in 24 days. If 14 men work for first three days and 10 women work after that for three days, find the part of work left after that ?

(1) $\frac{3}{4}$

(2) $\frac{1}{4}$

(3) $\frac{1}{2}$

(4) $\frac{1}{6}$

(5) $\frac{1}{5}$

Solution : 1

(1) In 1 day 14 men will do $= = \frac{1}{18}$ In 3 days 14 men will do $= = \frac{3}{18} = \frac{1}{6}$

In 1 days 15 women will do $= \frac{1}{24}$

In 3 days 15 women will do $= = \frac{3}{24} = \frac{1}{8}$

In 3 day 10 women will do $= \frac{1}{8} \times \frac{10}{15} = \frac{1}{12}$

∴ Remaining work $= 1 - \frac{1}{12} - \frac{1}{6}$

$= \frac{12-1-2}{12} - \frac{9}{12}$

$= \frac{3}{4}$

7. Perimeter of a rectangle is x and circumference of a circle is 8 more than the perimeter of the rectangle. Ratio of radius of circle and length of the rectangle is 1:2 and ratio of length and breadth of rectangle is 7:3. Find the length of the rectangle ?

(1) 14

(2) 21

(3) 28

(4) 35

(5) 7

Solution : 3

(3) Let the length and breadth of rectangle be 7 a and 3 a respectively.

Perimeter of rectangle =2 (7a +3a)

x = 20 a

$= \frac{RadiusOfCircle}{LengthOfRectangle} = \frac{1}{2}$

$\frac{r}{7a} = \frac{1}{2}$

$r = \frac{7a}{2}$

According to question,

2πr -20a = 8

$2 \times \frac{22}{7} \times \frac{7a}{2} - 20a = 8$

22a - 20a =8

2a =8

a = 4

8. A invests on some scheme at 5% and B at 3% for two years. If the total sum invested by A and B is 4000 and the simple interest received by both is same then find the amount invested by A.

(1) Rs. 1,300/-

(2) Rs. 1,500/-

(3) Rs. 2,500/-

(4) Rs. 2,700/-

(5) Rs. 2,100/-

Solution : 2

(2) Let the sum invested by A = Rs. x

and the sum invested by B = Rs. 4,000 -x

According to question,

$\frac{X \times 5 \times 2}{100} = \frac{(4000-x) \times 3 \times 2}{100}$

5x =12000 - 3x

8x =12000

x = Rs. 1,500/-

∴ Sum invested by A = Rs. 1,500/-

9. Two trains crosses each other in 14 sec when they are moving in opposite direction, and when they are moving in same direction they crosses each other in 3 min 2 sec. Find the speed of the faster train by what percent more than the speed of the slower train ?

(1) 16.67%

(2) 17.33%

(3) 16.33%

(4) 17.67%

(5) 18.33%

Solution : 1

(1) Let the speed of slower train = y_1 m/sec

and the speed of faster train = y_2 m/sec

We know that,

$Time = \frac{Distance}{Speed}$

$14 = \frac{1}{y_1+y_2}$ ....(i)

and $182 = \frac{1}{y_1-y_2}$ ....(ii)

From equations (i) and (ii),

14 (y_1 + y_2)=182 (Y_1 - Y_2)

14y_1 +14y_2 =182y_1 -182y_2

168y_1 =196y_2

$\frac{y_1}{y_2} = \frac{196}{168}$

$\frac{y_1}{y_2} = \frac{7}{6}$

$\therefore$ Required Percentage

$= \frac{7-6}{6} \times 100 = \frac{50}{3}$

=16.67%

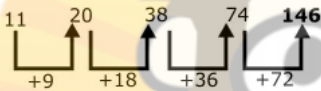---

Directions (10-14) : What will come in place of the question mark (?) in the following number series ?

10. 11 20 38 74 ?
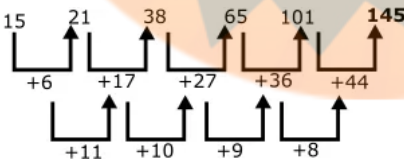   (1) 146
    (2) 154
    (3) 128
    (4) 132
    (5) 136

    Solution : 1

    11   20   38   74   **146**

    +9   +18   +36   +72

11. 15 21 38 65 101 ?
    (1) 124
    (2) 145
    (3) 136
    (4) 158
    (5) 162

    Solution : 2

    15   21   38   65   101   **145**

    +6   +17   +27   +36   +44

    +11   +10   +9   +8

12. 24 28 19 35 10 ?
    (1) 26
    (2) 36
    (3) 16

(4) 46

(5) 15

> **Solution : 2**
>
> 24   28   19   35   10   **46**
>
> $+(2)^2$ $-(3)^2$ $+(4)^2$ $-(5)^2$ $+(6)^2$
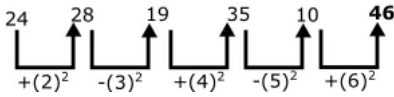
13. 7 16 45   184 915 ?

(1) 2092

(2) 5496

(3) 1048

(4) 4038

(5) 3268

> **Solution : 2**
>
> 7   16   45   184   915   **5496**
>
> x2+2   x3-3   x4+4   x5-5   x6+6
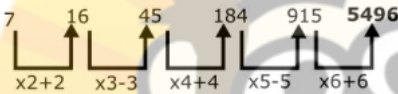
14. 12   19   35 59 90 ?

(1) 134

(2) 127

(3) 132

(4) 98

(5) 114

> **Solution : 2**
>
> 12   19   35   59   90   **127**
>
> +7   +16   +24   +31   +37
>
> +9   +8   +7   +6
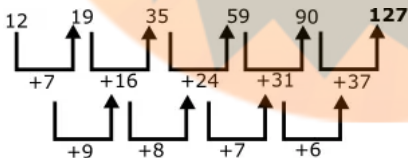
Directions (15-19) : *Study the following table and answer the questions that follow.*

	2006	2007	2008	2009	2010	2011
■ Company X	40	45	55	50	65	50
▫ Company Y	45	35	50	60	50	55
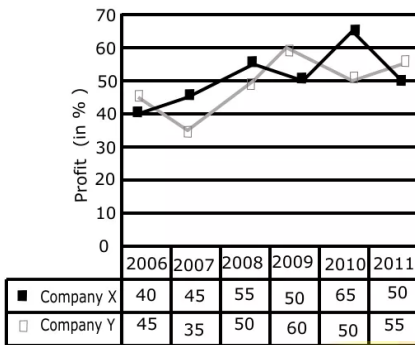
15. The incomes of companies X and Y in 2010 were in the ratio of 3 : 4 respectively. What was the respective ratio of their expenditures in 2010 ?

(1) 7 : 22

(2) 14 : 19

(3) 15 : 22

(4) 27 : 35

(5) 35 : 49

Solution : 3

(3) According to question,

$\frac{x \times 165}{y \times 150} = \frac{3}{4}$

$\frac{x}{y} = \frac{3 \times 150}{4 \times 165}$

$\frac{x}{y} = \frac{15}{22}$

16. If the expenditure of company Y in 2007 was ! 220 crores, what was its income in 2007 ?

(1) Rs. 312 crores

(2) Rs. 297 crores

(3) Rs. 283 crores

(4) Rs. 275 crores

(5) Rs. 250 crores

Solution : 2

(2) Let the income of company Y in 2007 = x

Profit percent = $= \frac{Income - Expenditure}{Expenditure}$

$\frac{35}{100} = \frac{x - 220}{220}$

77= x -220

x = Rs. 297 caror

17. If the expenditures of companies X and Y in 2006 were equal and the total income of two companies in 2006 was Rs. 342 crores, what was the total profit of two companies together in 2006 ? (Profit = Income Expenditure)

   (1) Rs. 240 crores

   (2) Rs. 171 crores

   (3) Rs. 120 crores

   (4) Rs. 102 crores

   (5) Rs. 150 crores

Solution : 4

(4) Let the expenditures of each of the companies X and Y in 2006 be Rs. x crores.

and let the income of company X in 2006 be Rs. z crores

So that the income of company Y in 2006 = Rs. (342 -z)crores

Then, for company X we have,

$40 = \frac{z-x}{x} \times 100$

$\Rightarrow \frac{40}{100} = \frac{z}{x} - 1$

$\frac{z}{x} = \frac{40}{100} + 1 \Rightarrow x = \frac{100z}{140}$ ....(1)

Also, for company Y we have.

$45 = \frac{342-z-x}{x} \times 100$

$342 - z - x = \frac{45}{100}x$

$342 - z = \frac{45x+100x}{100}$

$x = \frac{(342-z) \times 100}{145}$

From equations (i) and (ii), we get

$\frac{100z}{140} = \frac{(342-z) \times 100}{145}$

$\frac{5z}{7} = \frac{(342-z) \times 20}{29}$

29 z = (342-z) × 4 × 7

29z = 342 × 28 - 28z

57 z = 9576

z = 168

Putting the value of z in equation (i), we get

$x = \frac{100 \times 168}{140}$

x = 120

∴ Total expenditure of companies X and. Y in 2006

=2 × 120

= Rs. 240 crores

∴ Total profit = 342 - 240

= Rs. 102 crores

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18. The expenditure of company X in the year 2008 was Rs. 200 crores and the income of company X in 2008 was the same as its expenditure in 2011. What is the income of Company X in 2011 ?

   (1) Rs. 385 crores

   (2) Rs. 465 crores

(3) Rs. 335 crores

(4) Rs. 295 crores

(5) Rs. 250 crores

Solution : 2

(2) ; Let the income of company X in 2008 be x crores -

Then, $55 = \frac{x-200}{200} \times 100$

$\therefore$ Expenditure of company X in 2011

= Income of company X in 2008 = Rs.310 crores

Let the income of company X in 2011 be Rs.465 crores.

Then,

$50 = \frac{z-310}{310} \times 100$

z = 465

$\therefore$ Income of company X in 2011 =Z 465 crores

19. If the incomes of two companies were equal in 2009, then what was the ratio of expenditure of Company X to that of Company Y in 2009 ?

(1) 6 : 5

(2) 5 : 6

(3) 11 : 6

(4) 16 : 15

(5) 20 : 11

Solution : 4

(4) Let the income of each of the two companies X and Y in 2009 be Rs. x.

and let the expenditures of companies X and Y in 2009 be E_1 and E_2 respectively.

Then for company x, we have

$50 = \frac{x-E_1}{E_1} \times 100 \Rightarrow \frac{50}{100} = \frac{x}{E_1} - 1 \Rightarrow x = \frac{150}{100}E_1 \ldots \ldots (i)$

Also for company Y we have,

$60 = \frac{x-E_2}{E_2} \times 100 \Rightarrow \frac{60}{100} = \frac{x}{E_2} - 1 \Rightarrow x = \frac{160}{100}E_2 \ldots \ldots (ii)$

From equations (i) and (ii) we get,

$\frac{150}{100}E_1 = \frac{160}{100}E_2$

$\frac{E_1}{E_2} = \frac{160}{100} \times \frac{100}{150}$

$\frac{E_1}{E_2} = \frac{16}{15}$

$E_1 : E_2 = 16 : 15$

Directions (20-24) : In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and

Give answer :

(1) If x > y

(2) If x ≥ y

(3) If x < y

(4) If x ≤ y

(5) If x = y or relationship between x and y cannot be established.

20. I. $3x^2 - 22x + 7 = 0$

II. $y^2 - 15y + 56 = 0$

Solution : 4
I. $3x^2 - 22x + 7 = 0$
$3x^2 - 21x - x + 7 = 0$
$3x (x-7) - 1 (x-7) = 0$
$(3x-1) (x-7)$
$x = \frac{1}{3}, 7$
II. $y^2 - 15y + 56 = 0$
$y^2 - 7y - 8y + 56 = 0$
$y (y-7) -8 (y-7) = 0$
$(y-7) (y-8) = 0$
$y = 7, 8$
$\therefore x < y$

21. I. $2x^2 - 17x + 36 = 0$

II. $2y^2 - 19y + 44 = 0$

Solution : 4
I. $2x^2 - 17x + 36 = 0$
$2x^2 - 8x - 9x + 36 = 0$
$2x (x-4) - 9 (x-4) = 0$
$(x-4) (2x-9) = 0$
$x = \frac{9}{2}, 4$
II. $2y^2 - 19y + 44 = 0$
$2y^2 - 8y - 11y + 44 = 0$
$2y (y-4) - 11 (y-4) = 0$
$(y-4) (2y-11) = 0$
$y = 4, \frac{11}{2}$
$x \leq y$

22. I. $x - \sqrt{169} = 0$

II. $y^2 - 169 = 0$

Solution : 5
I. $x - \sqrt{169} = 0$
$x = \sqrt{169}$
$x = \sqrt{(13)^2}$
$x = \pm 13$ II. $y^2 - 169 = 0$
$y^2 = 169$

$y = \sqrt{169}$

y = ± 13

---

23. I. $3x^2 + 20x + 25 = 0$

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

Solution : 5

I. $3x^2 + 20x + 25 = 0$

$3x^2 + 15x + 5x + 25 = 0$

$3x(x-5) + 5(x+5) = 0$

$(x+5)(3x+5) = 0$

$x = \frac{5}{2}, -5$

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

$3y^2 + 12 + 2y + 8 = 0$

$3y(y+4)(3y+2) = 0$

$y = \frac{2}{3}, -4$

---

24. I. $3x^2 + 5x + 2 = 0$

II. $3y^3 + 18y + 24 = 0$

Solution : 1

I. $3x^2 + 5x + 2 = 0$

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

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

$(x+1)(3x+2) = 0$

$y = \frac{2}{3}, -1$

II.

$3y^2 + 18y + 24 = 0$

$3y^2 + 12y + 6y + 24 = 0$

$3y(y+4) + 6(y+4) = 0$

$(y+4)(3y+6) = 0$

y = -2,-4

x > y

---

25. A seller marks the price 50% above the cost price and gives 10% discount on an item.While selling, he cheats customer by giving 20% less in weight. Find his overall profit percent (approximate) ?

(1) 26%

(2) 65%

(3) 68%

(4) 72%

(5) 76%

Solution : 3

(3) ; Let the cost price be Rs. 100/-.

Then marked price will be Rs. 150/-

He gives 10% discount, so

Selling price $= 150 \times \frac{90}{100} = Rs.135$

As he cheats and gives 20% less in weight,

cost price becomes $= 100 \times \frac{80}{100} = Rs.80$

Profit percentage $= \frac{135-80}{80} \times 100$

$\approx 68\%$

26. There are 81 litre pure milk in a container. One-third of milk is replaced by water in the container. Again one-third of mixture is extracted and equal amount of water is added. What is the ratio of milk to water in the new mixture ?

    (1) 1 : 2

    (2) 1 : 1

    (2) 2 : 1

    (4) 4 : 5

    (5) None of these

    Solution : 4

    (4) ; Amount of milk left after first withdrawl

    $= 81 - \frac{81}{3} = 54 Litre$

    Amount of milk left after second withdrawl

    $= 54 - \frac{54}{3} = 36 Litre$

    Amount of water left = 81 −36 = 45

    litre Ratio of milk to water in the new mixture

    $= 36 : 45$

    $= 4 : 5$

27. A is 2 years older than B while B is 3 years younger than C. The ratio of age of A, 6 years hence and B, 2 years ago is 5:3. What was age of C, 6 years ago ?

    (1) 12 years

    (2) 19 years

    (3) 15 years

    (4) 14 years

    (5) 21 years

    Solution : 4

    (4) Let B's age = x years

    A's age = (x + 2) years

    C's age = (x + 3) years

    According to question,

    $\frac{x+2+6}{x-2} = \frac{5}{3}$

$\Rightarrow$ 3x + 24 = 5x - 10

$\Rightarrow$ 2x = 34

$\Rightarrow$ x = 17 years

C's age =17+3 =20 years

$\therefore$ C's age, 6 years ago = 20 - 6

=14 years

28. A, B and C started a business with their investments in the ratio 1 : 2 : 4. After 6 months, A invested the half amount more as before and B invested same the amount as before while C

withdrew 1/4th of his investment.

Find the ratio of their profits at the end of the year.

(1) 5 : 12 : 13

(2) 5 : 11 : 14

(3) 5 : 12 : 14

(4) 5 : 12 : 10

(5) None of these

Solution : 5

(5) ; Let their initial investments be x, 2x and 4x respectively.

$\therefore$ Required ratio

$= \left[6 \times \diamond + 6\left(x + \frac{x}{2}\right)\right] : [2x \times 12] : \left[6 \times 4x + 6\left(4x - \frac{4x}{4}\right)\right]$

= 15 : 2 × 12:42

=5:8:14

29. The average marks in Science subject of a class of 20 students is 68. If the marks of two students were misread as 48 and 65 of the actual marks 72 and 61 respectively, then what would be the correct average ?

(1) 68.5

(2) 69

(3) 69.5

(4) 70

(5) 66

Solution : 2

(2) Correct average marks

$= \frac{20 \times 68 - 48 - 65 + 72 + 61}{20}$

$= \frac{1360 + 20}{20} = 69$

Directions (30-34) : What should come in the place of question mark (?) in the given questions ?

30. 40% of 265 + 35% of 180 = 50% of ? + ?% of 80

(1) 80

(2) 95.5

(3) 130

(4) 125.5

(5) 115

Solution : 3

$\frac{40}{100} \times 265 + \frac{35}{100} \times 180 = \frac{50}{100} \times ? + \frac{?}{100} \times 80$

$106 + 63 = \frac{?}{2} + \frac{4 \times ?}{5}$

$169 = \frac{5? + 8?}{10}$

13? = 169 × 10

? = 130

31. √0.25 0.16 of 157 =?

(1) 0.43

(2) 12.56

(3) 0.91

(4) 17.25

(5) 9.50

Solution : 2

$\sqrt{0.25}\ \times 0.16 \times 157 = ?$

0.5 × 25.12 = ?

12.56 = ?

32. √? + 416 = (60% of 920) -110

(1) 576

(2) 676

(3) 784

(4) 1024

(5) 1156

Solution : 2

$\sqrt{?}\ + 416 = \frac{(60 \times 920)}{100} - 110$

√? + 416 = 552 - 110

√? + 416 = 552 - 110

√? = 442 - 416

√? = 26

∴ ? = 676

33. (682% of 782) ÷ 856 = ?

    (1) 4.50
    (2) 10.65
    (3) 2.55
    (4) 8.75
    (5) 6.25

> Solution : 5
> $\left(\frac{682}{100} \times 782\right) \div 856 = ?$
> $5333.24 \div 856 = ?$
> $6.23 = ?$
> $? \approx 6.25$

34. 15.5% of 850 + 24.8% of 650 = ?

    (1) 295
    (2) 330
    (3) 270
    (4) 375
    (5) 220

> Solution : 1
> (1)
> $\frac{15.5}{100} \times 850 + \frac{24.8}{100} \times 650 ?$
> $131.75 + 161.2 = ?$
> $292.95 = ?$
> $? \approx 295$

35. The time taken by a boat to travel; `x' km upstream is twice the time taken by the same boat to travel `x' km downstream. If speed of the boat in still water is 12 km/h. what is the speed of current 7 (in km/h)

    (1) 3
    (2) 4
    (3) 3.5
    (4) 4.5
    (5) None of these

> Solution : 2
> (2) : Let the speed of current = y km/h
> Downstream speed of boat = (12 + y) km/h
> Upstream speed of boat = (12− y) km/h
> According to question,
> $\frac{x}{12-y} = 2\left[\frac{x}{12+y}\right]$
> 12 + y = 24 - 2y

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 **II** is true

(2) If **only** conclusion **I**f is true

(3) If **both** conclusions **I** and **II** are true

(4) If **either** conclusion **I** or **II** is true

(5) If **neither** conclusion **I** nor **II** is true

1. **Statements :**
   $S \leq L \leq I = P \geq E > R$; $L > Q$
   Conclusions :
   I. $P > S$
   II. $I > R$

   > Solution : 3
   > **Statement :** $S \leq L \leq I = P \geq E > R$
   > $L > Q$
   > **Conclusions :**
   > I. $P \geq S \rightarrow$ True
   > II. $I \geq R \rightarrow$ True

2. **Statements :**
   $G > R \leq E = A \leq T \leq S$; $D \leq A \leq J$
   Conclusions :
   I. $T \geq D$
   II. $R > S$

   > Solution : 2
   > **Statements :** $G > R \leq E = A \leq T \leq$
   > $D \leq A \leq J$

D ≤ A ≤ T
Conclusions :
I. T ≥ D → True
II. R > S → True

3. **Statements :**

A ≥ B > C ≤ D ≤ E < F

Conclusions :

I. A ≥ E

II. C < F

Solution : 1
Statements : A ≥ B > C ≤ D ≤ E < F
Conclusions :
I. A ≥ E → True
II. C < F → True

4. **Statements :**

G > R ≥ E = A ≤ T ≤ S ; D ≤ A ≤ J

Conclusions :

I. J > G

II. J = G

Solution : 5
Statements : G > R ≥ E = A ≤ T ≤ S
D ≤ A ≤ J
G > R ≥ E = A ≤ J
Conclusions :
I. J > G → True
II. J = G → True

5. **Statements :**

S ≤ E ≤ I = P ≥ E > R; L > Q

Conclusions:

I . L < R

II. E ≥ Q

Solution : 5
Statements : S ≤ L ≤ I = P ≥ E > R
L > Q
Q < L ≤ I = P ≥ E

Conclusions :
I. L < R   →   True
II. E ≥ Q   →   True

Directions (6-10) Study the following information carefully and answer the questions given below.

Eight persons — H, I, J, K, L, M, N and O — are standing in a straight line at equidistant. Some of them are facing north while others are facing south.

M is standing third to the right to H. M is standing at one of the extreme ends. L is standing third to the left of H. The immediate neighbours of J. face north. N is not an immediate neighbour of H.The persons standing at the extreme ends face the same direction (both are facing either north or south). The immediate neighbours of H face, just opposite direction as that of M. The immediate neighbours of 0 face opposite direction with respect to each other.K is one of the immediate neighbours of L and is facing north. I is standing between J and M. Not more than four persons are facing north.L is immediate right of K.

6. Who among the following is third to the left of N ?
   (1) K
   (2) J
   (3) H
   (4) I
   (5) O

   Solution : 2
   6-10
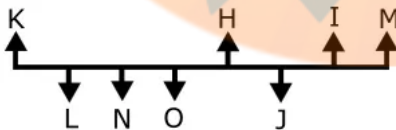
7. The immediate neighbours of L are :
   (1) M and N
   (2) N and O

(3) K and N

(4) N and H

(5) J and H

Solution : 3

8. How many persons are standing exactly between I and 0 ?

(1) Three

(2) Four

(3) One

(4) Two

(5) None

Solution : 4

9. Four of the following five are alike in a certain way based on the above arrangement and hence form a group. Which of the following does not belong to that group ?

(1) N

(2) L

(3) O

(4) J

(5) K

Solution : 5

10. Who among the following is exactly between L and J ?

(1) N

(2) O

(3) H

(4) I

(5) None

Solution : 2

Directions (11-15) : 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. Read all the conclusions 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 II follows.

(4) If neither conclusion I nor II follows.

(5) If both conclusions I and II follow.

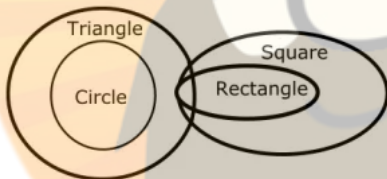11. **Statements :** All circles are a triangle.

Some triangles is rectangles.

All rectangles are squares.

Conclusions :

I. All rectangles being triangles is a possibility.

II. All circles being squares is a possibility.

Solution : 5

12. **Statements :**

Some chairs are tables.

Some beds are tables.

No furniture is bed.

Conclusions :

I. All chairs being furniture is a possibility.

II. Some tables are not bed is a possibility.

Solution : 5

13. **Statements :**

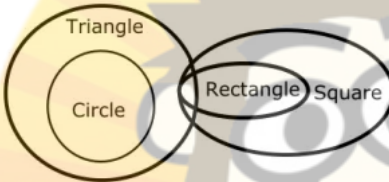All circles are a triangle.

Some triangles are rectangles.

All rectangles are squares.

Conclusions :

I. Some triangles are not rectangles.

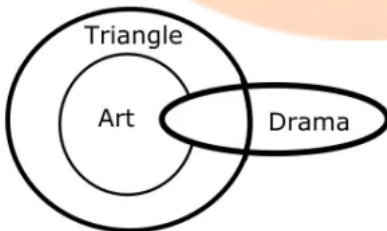II. No square is a circle.

14. **Statements :**

All art are theatre.

Some art are dramas

Conclusions :

I. All dramas being theatre is a possibility.

II. Some dramas are theatre.

15. **Statements :**

Some chairs are tables.

Some beds are tables.

No furniture is bed.

Conclusions :

I. Some tables are not furniture.

II. All tables being furniture is a possibility.
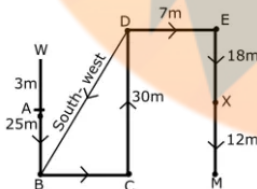
Solution : 4

Directions (16-18) : Read the given information carefully and answer the given questions.

B is 25 m south of A. C is 10 m east of B. D is 30 m north of C. E is 7 m east of D. X is 18 m south of E. M is 12 m south of X. C is 7 m west of M.

16. B is in which direction from Point D ?

(1) South

(2) South-West

(3) North-East

(4) South-East

(5) North

Solution : 2

17. If Point W is 3 m to the north of A, then what is the distance between B and W ?

(1) 28 m

(2) 15 m

(3) 21 m

(4) 24 m

(5) 17 m

> Solution : 1

18. What is the distance between B and M?

    (1) 17 m

    (2) 15 m

    (3) 21 m

    (4) 19 m

    (5) 13 m

> Solution : 1

Directions (19-33) : *Study the following information to answer the given questions.*

S, T, U, V, W, X, Y and Z are sitting in a straight line equidistant from each other (but not necessarily in the same order). Some of them are facing south while some are facing north.

(**Note :** Facing the same direction means, if one is facing north then the other also faces north and vice-versa. Facing the opposite directions means, if one is facing north then the other faces south and vice-versa) S faces north. Only two people sit to the right of S. T sits third to the left of S. Only one person sits between T and X. X sits to the immediate right of W. Only one person sits between W and Z. Both the immediate neighbours of T face the same direction. U sits third to the left of X. T faces the opposite direction as S. Y does not sit at any of the extreme ends of the line. V faces the same direction as W. Both Y and U face the opposite direction of Z.

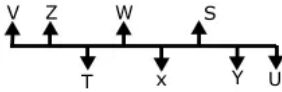19. How many persons in the given arrangement are facing North ?

    (1) More than four

    (2) Four

    (3) One

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(4) Three

(5) Two

Solution : 2

19-33

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

(1) W, X

(2) Z, Y

(3) T, S

(4) T, Y

(5) V, U

Solution : 4

21. What is the position of X with respect to Z ?

(1) Second to the left

(2) Third to the right

(3) Third to the left

(4) Fifth to the right

(5) Second to the right

Solution : 2

22. Who amongst the following sits exactly between Z and W ?

(1) T

(2) Y

(3) X

(4) W

(5) U

Solution : 1

23. Who is sitting second to the right of T ?

(1) Z

(2) V

(3) X

(4) W

(5) None of these

Solution : 2

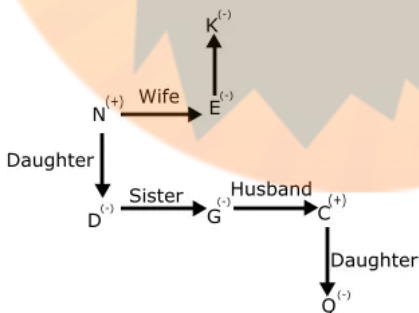**Directions (24-26) :** Study the following information and answer the given questions.

• D is daughter of N. E is wife of N.

• G is sister of D. C is married to G.

• N has no son. K is mother of E.

• Q is only daughter of C.

24. How Q is related to D ?

(1) Daughter

(2) Cousin

(3) Niece

(4) Sister-in-law

(5) Cannot be determined

Solution : 3

24-26

25. How N is related to K ?

(1) Brother-in-law

(2) Cousin

(3) Son-in-law

(4) Sister

(5) Brother

Solution : 3

26. How many daughters N have ?

(1) One

(2) Three

(3) Two

(4) Cannot be determined

(5) None of these

Solution : 3

Directions (27-29) : Study the following information and answer the given questions.

There are six wires in a table A, B, C, D, E and F. They have different length but not necessarily in the same order. E is greater than C but less than D and B. A is greater than D and B. A is not longest wire. F is B cm long and E is 4 long.

27. If D is 5 cm less than F. what would be the length of D ?

(1) 7

(2) 8

(3) 9

(4) Cannot be determined

(5) None of these

Solution : 2

27-29

$$F > A > \frac{D}{B} > E > C$$

13 cm   4 cm

28. Which wire has least length ?

 (1) B

 (2) A

 (3) C

 (4) E

 (5) None of these

> Solution : 3

29. If A carry 10 cm length and B carry 5 cm. length then what would be the length of C ?

 (1) 6

 (2) 2

 (3) 7

 (4) 9

 (5) None of these

> Solution : 2

Directions (30-35) : Study the given information carefully to answer the given questions.

M, N, O, P, Q R and S are seven people live on seven different floors of a building but not necessarily in the same order. The lower most floor of the building is numbered 1, the one above that is numbered 2 and so on till the topmost floor is numbered 7. Each one of them have different income i.e., 3500, 15000, 7500, 9000, 11000, 13500 and 5000. (But not necessarily in the same order.) M lives on an odd numbered floor but not on the floor numbered 3. The one who has income of 11000 lives immediately above M. Only two people live between M and the one who has income of 7500. The one who has income of 15000 lives on one of the odd numbered floors above P. Only three people live between 0 and the one who has income of 15000. The one who has income of 7500 lives immediately above 0. R earns 4000 more than Q. The one who has income of 3500 lives immediately above the one who

has income of 5000. S lives on an odd numbered floor. Only one person lives between N and Q. N lives on one of the floors above Q. Neither 0 nor M has income of 0000. Q does not has income of -500.

30. How much income M has ?
    (1) 13500
    (2) 5000
    (3) 7500
    (4) 15000
    (5) 3500

Solution : 4

30-35

Floor	Person	Income
7	S	9000
6	N	11000
5	M	15000
4	Q	3500
3	P	5000
2	R	7500
1	O	13500

31. Which of the following combinations is true with respect to the given arrangement 7
    (1) 13500 - 0
    (2) 15000 - R
    (3) 5000 - S
    (4) 11000 - P
    (5) 9000 - N

Solution : 1

32. If all the people are made to sit in alphabetical order from top to bottom, the positions of how many people will remain unchanged ?
    (1) Four
    (2) None
    (3) Two
    (4) One
    (5) Three

    Solution : 3

33. Which of the following statements is true with respect to the given arrangement ?
    (1) The one who has income of 5000 lives immediately below M.
    (2) R has income of 15000.
    (3) None of the given options is true.
    (4) Only four people live between P and S.
    (5) S lives immediately below Q.

    Solution : 3

34. Who amongst the following lives on the floor numbered 2 ?
    (1) N
    (2) The one who has income of 3500
    (3) The one who has income of 5000
    (4) P
    (5) R

    Solution : 5

35. How much income R has ?
    (1) 13500
    (2) 5000
    (3) 7500
    (4) 15000
    (5) 3500

    Solution : 3