SBI PO Prelim 2017 Memory Based Question Paper

Quantitative Aptitude

Direction Q (1-5): In the following question, two equations I and II are given. Solve both the equations carefully & answer the questions given below:

1.
$$1.2x^2 - 7x + 6 = 0$$

II.
$$y^2 - 3y + 2 = 0$$

B.
$$x > y$$

E. x = y or no relation can be established.

Solution

$$2x^2 - 7x + 6 = 0$$

$$2x^2 - 4x - 3x + 6 = 0$$

$$2x(x-2) - 3(x-2) = 0$$

$$(x-2)(2x-3)=0$$

$$x = \frac{3}{2}, 2$$

$$y^2 - 3y + 2 = 0$$

$$y^2 - 2y - y + 2 = 0$$

$$y(y-2)-1(y-2)=0$$

$$(y-1)(y-2)=0$$

$$y = 1, 2$$



No relation can be established between x & y.

2.
$$1.3x^2 + 4x + 1 = 0$$

II.
$$y^2 + 5y + 6 = 0$$

A.
$$x < y$$

C.
$$x \le y$$

D.
$$x \ge y$$

E. x = y or no relation can be established.

Solution

$$3x^2 + 4x + 1 = 0$$

$$3x^2 + 3x + x + 1 = 0$$

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

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

$$x = -1, -\frac{1}{2}$$

$$y^2 + 5y + 6 = 0$$

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

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

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

$$y = -3, -2$$

3.
$$1.2x^2 + 5x + 2 = 0$$

$$y^2 + 9y + 20 = 0$$

A.
$$x < y$$

C.
$$x \le y$$

E. x = y or no relation can be established.

Solution

$$2x^2 + 5x + 2 = 0$$

$$2x^2 + 4x + x + 2 = 0$$

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

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

$$x = -2, -\frac{1}{2}$$

$$y^2 + 9y + 20 = 0$$

$$y^2 + 4y + 5y + 20 = 0$$

$$y(y+4)+5(y+4)=0$$

$$(y+5)(y+4)=0$$

$$y = -5, -4$$

4. I.
$$x^2 - 7x + 10 = 0$$

II.
$$y^2 - 12y + 35 = 0$$

A. $x < y$

A.
$$\dot{x} < y$$

B.
$$x > y$$

C. x ≤ y

D.
$$x \ge y$$

E. x = y or no relation can be established. eerdost

Solution

$$x^2 - 7x + 10 = 0$$

$$x^2 - 2x - 5x + 10 = 0$$

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

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

$$x = 2, 5$$

$$v^2 - 12v + 35 = 0$$

$$v^2 - 5v - 7v + 35 = 0$$

$$y(y-5)-7(y-5)=0$$

$$(y-5)(y-7)=0$$

$$y = 5,7$$

5.
$$I.(x-12)^2 = 0$$

II.
$$y^2 = 144$$

A.
$$x < y$$

B.
$$x > y$$

C.
$$x \le y$$

D.
$$x \ge y$$

E. x = y or no relation can be established.

Solution

$$(x-12)^2 = 0$$

$$x-12 = 0$$

$$x = 12$$

$$v^2 = 144$$

$$y = -12,12$$

Q (6-10) In the following number series, one number is missing. What should come at the place of missing number (?)

6.14, 8, 9, 14.5, 30, ?

- A. 72
- B. 73
- C. 74
- D. 75
- E. 76

Solution

$$14 \times 0.5 + 1 = 8$$

$$8 \times 1 + 1 = 9$$

$$9 \times 1.5 + 1 = 14.5$$

$$14.5 \times 2 + 1 = 30$$

$$30 \times 2.5 + 1 = 76$$

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7.77, 85, 69, 101, 37, ?

- A. 105
- B. 125
- C. 145
- D.165
- E. 185

Solution

$$77 + (8 \times 1) = 85$$

$$85 - (8 \times 2) = 69$$

$$69 + (8 \times 4) = 101$$

$$101 - (8 \times 8) = 37$$

$$37 + (8 \times 16) = 165$$

8.20, 29, 54, 103, 184, ?

A. 301

B. 302

C. 303

D. 304

E. 305

Solution

$$20 + 3^2 = 29$$

$$29 + 5^2 = 54$$

$$54 + 7^2 = 103$$

$$103 + 9^2 = 184$$

$$184 + 11^2 = 305$$

9.7, 8, 18, 57, ?, 1165

A. 212

B. 217

C.232

D. 247

E. 275

Solution

$$7 \times 1 + 1 = 8$$

$$8 \times 2 + 2 = 18$$

$$18 \times 3 + 3 = 57$$

$$57 \times 4 + 4 = 232$$

$$232 \times 5 + 5 = 1165$$

10.5, 7, 18, 47, 105, ?

A. 155

B. 175

C.195

D. 215

E. 235

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Solution

Difference of numbers

$$7 - 5 = 2$$

$$18 - 7 = 11$$

$$47 - 18 = 29$$

$$103 - 47 = 56$$

$$195 - 103 = 92$$

Difference in difference of numbers

$$11 - 2 = 9$$

$$29 - 11 = 18$$

$$56 - 29 = 27$$

$$92 - 56 = 36$$

Direction Q (11-15): What approximate value should come at the place of question mark (?) in the following question?

11. $13.03^2 + ? + 21.998 \times 4.012 = 298.998$

A. 32

B. 42

C. 52

D. 62

E. 72

Solution

$$13.03^2 + ? + 21.998 \times 4.012 = 298.998$$

$$13^2 + ? + 22 \times 4 = 299$$

$$169 + ? + 88 = 299$$

$$? = 42$$

12.
$$\sqrt{33125} \times \sqrt{2600} - (83.01)^2 = (?)^2 + (36.99)^2$$

- A. 24
- B. 39
- C. 36
- D. 28
- E. 32

Solution

Making approximation,

$$\sqrt{33124} \times \sqrt{2601} - (83)^2 = (?)^2 + (37)^2$$

$$\Rightarrow$$
 182 × 51 – 6889 = ?² + 1369

$$\Rightarrow$$
 9282 - 6889 - 1369 = ?²

$$\Rightarrow$$
 ?² = 1024

$_{13.}\sqrt{454 + 985} - ?^2 \div 18.752 = 18.9001$

A.19

- B. 18
- C. 21
- D. 25
- E. 15

Solution

$$\sqrt{454 + 985} - ?^2 \div 18.752 = 18.9001$$

$$\Rightarrow \sqrt{1439} - ?^2 \div 18.752 = 18.9001$$

Here,

18.752 ≈ 19

18.9001 ≈ 19

Now, the expression will become:

$$38 - ?^2 \div 19 = 19$$

$$\Rightarrow$$
?² ÷ 19 ≈ 38-19

$$\Rightarrow$$
?² ≈361

14. $7441 \div 34 \times 12 = ? \times 9 + 110$

A. 420

B. 280

C. 590

D. 350

E. 220

Solution

$$\frac{7441}{34}$$
*12 = ? *9 + 110

2626 ≈? × 9 + 110

?×9≈2516

$$? \approx \frac{2516}{9} = 279.55 \approx 280$$

15.5466.97-3245.01+1122.99=? + 2309.99

A. 1130

B. 1000

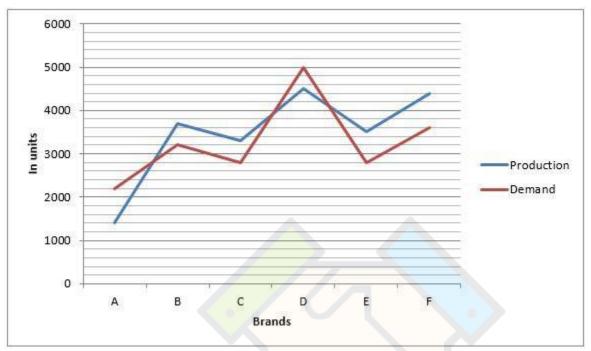
C. 1100

D.1030

E. 1060

Solution

Direction Q (16-20): Study the following graph carefully to answer the question given below: Given below is the demand and production of 6 brands (in units) of a product in the year 2016.



16. If the demand for brand C product increase by 75% then to meet the demand production should be increased by what percent?

A. 32.65%

B. 48.48%

C. 57.14%

D. 31.25%

E. None of these

Solution

Demand for brand C product = 2800 units

Demand for brand C product increase by 75%

- ⇒New demand of brand C product = 175% of 2800 units
- ⇒New demand of brand C product = 4900 units

Production of brand C product = 3300 units

To meet the demand the brand C should raise the production of product to 4900 units ∴1600 more units should be produced.

$$\Rightarrow$$
 required percentage = $\frac{1600}{3300} \times 100 = 48.48\%$

Hence, to meet the demand the brand C should raise the production by 48.48%.

17. Brand A increase its production to meet its demand. With every 160 unit produced the brand increases its price by 10%. If the earlier price of one product was INR 5000 then find the new price of the product.

A. INR 5500

B. INR 6655

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C. INR 7320.5

D. INR 8052.55

E. Cannot be determined

Solution

Demand for brand A product = 2200 units

Production of brand A product = 1400 units

Difference between demand and production of brand A product = 800 units

The company has to raise its production to 2200 to meet its demand for that it has to produce 800 units more.

With every 160 unit produced the brand increases its price by 10%.

 \Rightarrow Number of times the brand increase its price by 10% = 800/160 = 5

Earlier price of one product was INR 5000

$$5000 \times \frac{110}{100} \times \frac{110}{100} \times \frac{110}{100} \times \frac{110}{100} \times \frac{110}{100} = 8052.55$$

⇒New price of the product =

Hence, the new price of the product is INR 8052. 55

18. The demand for brand D product fell. The new demand is 20% less than its production. Find by what percentage demand fell?

A.28%

B. 30% C.

38.88% D.

72% E.

32%

Solution

Demand of brand D product = 5000 units

Production of brand D product = 4500 units

The new demand is 20% less than its production

New demand for brand D product = 80% of 4500 units

- ⇒New demand of brand D product = 3600 units
- ∴Difference in earlier demand and new demand = 5000 3600 = 1400
- ⇒Demand fell by 1400 units

$$\frac{1400}{5000} \times 100 = 28\%$$

Now, required percentage = $\frac{1400}{5000} \times 100 = 28\%$ Hence, the demand for brand D product fell by 28%.

19. Brand B decreased its price of the product to meet its demand to its production. When the price decreased by 12% the demand increased by 25%. If the ratio between the new price and new demand is 11:20 then find the price of the product before the decrease.

A.INR 2500

B. INR 2300

C. INR 2200

D. INR 2000

E. INR 2800

Let the price of the product be INR x

The brand B decreased its price by 12% which led to increasing in demand by 25%

 \Rightarrow New price of the product = 88% of x

Demand for the brand B product = 3200 units

- ⇒New demand of the brand B product = 125% of 3200
- ⇒New demand of the brand B product = 4000 units

The ratio between the new price and new demand is 11:20

$$\Rightarrow \frac{\frac{88x}{100}}{4000} = \frac{11}{20}$$

$$\Rightarrow \frac{88x}{100} \times \frac{1}{4000} = \frac{11}{20}$$

$$\Rightarrow \frac{88x}{100} = \frac{11}{20} \times 4000$$

$$\Rightarrow$$
x = 2500

Hence, original price of the brand B product is INR 2500

20. The production of brand E and F took together is approx, what percent of total demand of E and

F?

A. 81%

B. 21% C.

123% D.

121% E.

23%

Solution

Production of brand E product = 3500 units

Production of brand F product = 4400 units

Total production of brand E and F = 7900 units

Demand of brand E product = INR 2800 units

Demand of brand F product = INR 3600 units

$$\frac{7900}{6400} \times 100 = 123.43\%$$

Now, required percentage = $\frac{7900}{6400} \times 100 = 123.43\%$

21. Ratio between heights of 2 cylinder in the ratio 3:5. Their volumes are in the ratio 27:80. Find ratio between their radiuses.

A. 1/2

B. 2/3

C. 3/4

D. 4/5

E. None of these

Solution

Let the heights, radius & volumes of two cylinders are h_1 , h_2 , r_1 , r_2 , V_1 , V_2 respectively.

$$\frac{h_1}{h_2} = \frac{4}{5}$$

$$\frac{V_1}{V_2} = \frac{27}{80}$$

$$\frac{\pi r_1^2 h_1}{\pi r_2^2 h_2} = \frac{27}{80}$$

$$\frac{r_1^2}{r_2^2} = \frac{9}{16}$$

$$\frac{r_1}{r_2} = \frac{3}{4}$$

22. B is 20% efficient than A. B started the work & do it for x days. And then B is replaced by A. And A completed the remaining work in x+8 days. Ratio of work done by A & B is 3:2. In how many day A & B working together to complete the whole work?

A. 120/12

B. 150/11 days

C. 140/13 days

D. 100/33 days

E. 75/12 days

Solution

Let the efficiency of A= 5unit per day Efficiency of B= 120% A= 6 unit per day

Work done by B = 6*x = 6x unit

Work done by A = 5(x+8) = 5x+40 unit

As per Question: 5x+40/6x = 3/2

10x + 80 = 18x

8x=80 i.e. x= 10

Then the total work to be done= 6x+ 5x+40= 150 unit

Time taken by A and B in completing the whole work together= total work/ efficiency of A and B =150/6+5=150/11 days

23. The time taken for covering 'X' Km by downstream is equal to 'X-18' by covering upstream. Upstream speed is 6 km/ hr less than that of downstream. If the speed of the boat in still water is 15 km/hr. What is the value of 'X'.

A. 51

B. 52

C. 53

D. 54

E. 55

Solution

Let us assume that speed of boat in still water is v km/hr and speed of current is s km/hr. Then

$$\frac{X}{v+s} = \frac{X-18}{v-s}$$

$$v-s=v+s-6$$

$$2s = 6$$

$$s = 3$$

$$v = 15$$

$$\frac{X}{18} = \frac{X - 18}{12}$$

$$12X = 18X - 324$$

$$6X = 324$$

$$X = 54$$

24. A sum of Rs. 9,100 is borrowed at 20% per annum compounded annually. If the amount is to be paid in two years, the amount will be?

A. 1,20,000 Rs.

B. 1,25,760 Rs.

C. 1,27,526 Rs.

D. 1,31,040 Rs.

E. 1,34,034 Rs.

Solution

Sum borrowed = 91,000

$$91,000\left(1+\frac{20}{100}\right)^2=1,31,040$$

The amount to be paid back in two years =

25. If an article is marked 40% above the cost price. If discount of x% is given on the marked price of the article then final profit of 12% is obtained. Now if CP of a new article is 120 Rs. and x% profit is desired then what should be the selling price of that new article?

A. 140

B. 142

C. 144

D. 146

E. 148

Solution

$$MP = 1.4CP$$

$$MP\left(1 - \frac{x}{100}\right) = 1.12CP$$

$$1.4CP\left(1-\frac{x}{100}\right)=1.12CP$$

$$\left(1 - \frac{x}{100}\right) = \frac{1.12}{1.40}$$

$$\frac{x}{100} = 1 - \frac{1.12}{1.40}$$

$$\frac{x}{100} = \frac{0.28}{1.40}$$

$$x = 20\%$$

Cost Price of new article is 120 Rs.

So if 20% profit is desired then selling price will be = 1.2*120 = 144 Rs.

26. A, B and C started a business and invested in the ratio of 3:4:5. After 4 months, A withdrew 1/12th amount of what B and C invested. If the annual income was 9200, then what was share of B?

A. 3280

B. 3480

C.3680

D. 3880

E. 4080

Solution

Let us assume that initial investments by A, B & C are 3x, 4x & 5x respectively.

This investment was same for B & C throughout the year.

However, A withdrawn $1/12^{th}$ of 4*(4x+5x) = 3x

So, investment of A for next 8 months will be 0.

$$\frac{(4x*12)}{(3x*4) + (4x*12) + (5x*12)}(9200) = 3680$$

Hence share of B in the total profit of 9200 Rs. will be =

27. In a 40 litres mixture acetic acid and sodium acetate are in the ratio 3:1, find the amount of sodium acetate solution to be added to make the ratio 2:3.

A. 40 litres

B. 20 litres

C. 15 litres

D. 30 litres

E. 35 litres

Solution

Let us first calculate the initial volumes of acetic acid and sodium acetate solution Since, the ratio is 3:1 and the total volume is 40 litres we have the equation $3x + x = 40 \Rightarrow 4x = 40 \Rightarrow x = 10$.

the initial volumes are 3x = 30 litres and x = 10 litres.

To make the ratio 2:3, let w litres of sodium acetate solution be

added. Thus, the proportion is 30: (w+10) = 2: 3 $\Rightarrow 30 \times 3 = (w+10) \times 2$ (if a:b=c:d then a/b=c/d or ad=bc)

⇒90=2w+20

⇒70=2w

⇒w=35litre

28. Radhika has two daughters by name Rinku and Sindhu. The ratio of the age of Radhika and Rinku is 3:1 and that of Rinku and Sindhu is 8:5. Given that Rinku is six years elder to Sindhu. Find the ratio of their ages after 12 years.

A. 29:15:12

B. 30:14:10

C. 29:14:11

D. 30:14:11

E. 30:13:11

The ratio of the ages of Radhika and Rinku is 3:1.

Let their ages be 3x and x respectively -(1).

The ratio of ages of Rinku and Sindhu is 8:5.

Let their ages be 8y and 5y.

Given that Rinku is 6 years elder to Sindhu. $\cdot \cdot 8y - 5y = 6 \Rightarrow y = 2$.

Thus, the present ages of Rinku and Sindhu are $8 \times 2 = 16$ and $5 \times 2 = 10$ respectively.—(2)

From (1) and (2), we have x = 16.

Therefore, the age of Radhika is $3 \times 16 = 48$.

After 12 years, their ages would be 48 + 12 = 60,16 + 12 = 28 and 10 + 12 = 22 respectively.

So, the ratio is 60:28:22 or **30:14:11** (dividing throughout by 2).

29. Three years ago the average age of Mohan's family having 5 members was 17 years. Mohan becomes father but the average age of his family is same today. What is the present age of baby?

A. 1 year

B.2 years

C. 3 years

D. 4 years

E. 5 years **Solution**

The age of 5 members 3 years ago=17×5=85 years

Total age of 5 members at present= $85 + (5 \times 3) = 100$ years

Total age of 6 members at present =17×6=102 years...

(As average is same at present so we took 17)

Hence, age of baby = 102-100 = 2 years

30. Out of 12 persons, 11 spend Rs.2000 monthly. The twelfth person spends Rs.110 more than the average spending of the 12 people. How much money does the twelfth person spend?

A. Rs.2200

B.Rs.2120

C. Rs.3300

D. Rs.1800

E. Rs.2010

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Solution

Average Spending = (Total Spending of the 12 persons)/12

Total spending of 11 persons = $2000 \times 11 = 22000$

Let the spending of the 12th person be x.

So, according to the question, the average spending of the 12 persons = x - 110

So, (x-110) = (22000 + x)/12

 \rightarrow 12x - 1320 = 22000 + x

 \rightarrow 11x = 23320

So, x = Rs.2120

Q (31-35) Direction: Read the following information carefully and answer the questions given below.

NAME OF THE	TOTAL NUMBER OF STUDENTS (in 2016)	PERCENTAGE OF MALE STUDENTS
COLLEGES	310DEN13 (III 2010)	MALESTODENTS
A	1850	54%
В	1550	66%
С	1340	45%
D	1675	56%
Е	1250	72%
F	1450	38%

31. Find the average of the number of female in all the colleges except college C and E?

A. 672.8

B. 683.5

C. 750

D.753.5

E. 602.8

Solution

Total number of students in college A = 1850

54% of the total students are male

⇒46% of the total students are female

∴Number of female students in college A = 46% of 1850

⇒Number of female students in college A = 851

Total number of students in college B = 1550

66% of the total students are male

⇒34% of the total students are female

:Number of female students in college B = 34% of 1550

⇒Number of female students in college B = 527

Total number of students in college D = 1675

56% of the total students are male

⇒44% of the total students are female

∴Number of female students in college D = 44% of 1675

⇒Number of female students in college D = 737

Total number of students in college F = 1450

38% of the total students are male

⇒62% of the total students are female

∴Number of female students in college F = 62% of 1450

⇒Number of female students in college F = 899

$$\frac{851+527+737+899}{} = \frac{3014}{}$$

Now, required average =

age = 4 4 = 753.5

Hence, the average of number of female students in all the colleges except C and E is 753.5

32. Find the average difference between the number of male and female students in all the colleges?

A.312.833

B. 314.60

C. 313

D. 314.50

E. None of these

Solution

Total number of students in college A = 1850

54% of the total students are male

- ⇒46% of the total students are female
- ∴8% difference between male and female students
- ⇒Difference between male and female students in college A = 8% of 1850
- ⇒Difference between male and female students in college A = 148

Total number of students in college B = 1550

66% of the total students are male

- ⇒34% of the total students are female
- ∴32% difference between male and female students
- ⇒Difference between male and female students in college B = 32% of 1550
- ⇒Difference between male and female students in college B = 496

Total number of students in college C = 1340

45% of the total students are male

- ⇒55% of the total students are female
- :10% difference between male and female students
- ⇒Difference between male and female students in college C = 10% of 1340
- ⇒Difference between male and female students in college C = 134

Total number of students in college D = 1675

56% of the total students are male

- ⇒44% of the total students are female
- :12% difference between male and female students
- ⇒Difference between male and female students in college D = 12% of 1675
- ⇒Difference between male and female students in college D = 201

Total number of students in college E = 1250

72% of the total students are male

- ⇒28% of the total students are female
- ∴44% difference between male and female students
- ⇒Difference between male and female students in college E = 44% of 1250
- ⇒Difference between male and female students in college E = 550

Total number of students in college F = 1450

38% of the total students are male

- ⇒62% of the total students are female
- ∴24% difference between male and female students
- ⇒Difference between male and female students in college F = 24% of 1450



⇒Difference between male and female students in college F = 348

$$\frac{148+496+134+201+550+348}{6} = \frac{1877}{6} = 312.8$$

Now, required average =

Hence, the average of the difference between the number of male and female in all the colleges is 312.8.

33. The number of female students in college C is what approx. percent of the number of male students of college A?

- A. 70%
- B. 72%
- C. 74%
- D. 76%
- E. 77%

Solution

Total number of students in college C = 1340

45% of the total students are male

- ⇒55% of the total students are female
- ∴Number of female students in the college C = 55% of 1340
- ⇒Number of female students in the college C = 737

Total number of students in college A = 1850

54% of the total students are male

- ∴Number of male students in the college A = 54% of 1850
- ⇒Number of male students in the college A = 999

$$\frac{737}{999} \times 100 = 73.77 \approx 74\%$$

Now, required percentage = 99

Hence, the number of female students in college C is approx. 74% of number of male students of college A

34. Out of total female in college E, 30% are in Arts department which is 35% of the total students in Arts department. Find out approximately how much percent of male students from E are in Arts department?

- A. 20%
- **B. 22%**
- C. 19%
- D. 23%
- E. 25%

Solution

Total number of students in college E = 1250

72% of the total students are male

- ⇒28% of the total students are female
- ∴Number of female students in college E = 28% of 1250
- ⇒Number of female students in college E = 350

Out of 350 students, 30% are in Arts department

- ⇒Number of female students in Arts department = 30% of 350
- ⇒Number of female students in Arts department = 105

105 female students is 35% of total students in Arts department

Let the total number of students in Arts department be x

 \Rightarrow Number of female students in Arts department = 35% of x

$$\Rightarrow$$
x = 300

∴Number of male students in arts department = 300 – 105 = 195

Number of male students in college E = 72% of 1250

⇒Number of male students in college E = 900

$$\frac{195}{200} \times 100 = 21.666\%$$

Now, required percentage = $\frac{195}{900} \times 100 = 21.666\%$ = 22%

Hence, approx. 22% of the total male students in the college are in Arts department.

35. Find the ratio of 2/3rd of college B male students and female students of college F.

A. 29: 11

B. 29: 33

C. 33: 29

D. 29: 22

E. 22: 29

Solution:

Total number of students in college B = 1550

66% of the total students are male

:Number of male students in college B = 66% of 1550

⇒Number of male students in college B = 1023

 $\therefore 2/3^{rd}$ of male students of college B = 682

Total number of students in college F = 1450

38% of the total students are male

⇒62% of the total students are female

∴Number of female students in college F = 62% of 1450

⇒Number of male students in college F = 899

$$\frac{682}{999} = \frac{22}{39}$$

Now, required ratio = 899

Hence, the ratio of 2/3rd of college B male students and female students of college F is 22: 29

Logical Reasoning Questions

Direction Q (1-5): Study the following information carefully and answer the question given below:

8 persons A, B, C, D, E, F, G and H have their birthdays on 14th and 21st of four different months, January, March, April and June not necessarily in the same order. A has birthday on even date and a month which having 31 days. Number of persons between C and F is same as the number of persons between B and H. H's birthday is not on even number date and a month which having 31 days. B is not born after H. C is born before F and B, who is not born in January. D is not born in JunE. F was born on even number datE. D's birthday is on odd number date and a month which having 31 days. B and H were not born in the same month. E was born after F.

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1. How many persons born after F?

A. 1

B. 2

C.3

D. 4

E. 5

Solution

Month	14 th	21st
January	A	D
March	С	G
April	F	В
June	Е	Н

2. Who among the following is not born in the month having 30 days?

A. F

B. D

C.B

D. H

E.E

3. Who among the following is not belongs to the group? A.A

B. D

C. G

D. B

E. H

4. How many persons have birthday between D and E?

A. 1

B. 2

C. 3

D. 4

E. 5

5. Who among the following in not born before F?

A. A

B. D

C.C

D. H

E. G

Directions Q (6-10): In these questions, relationship between different elements is shown in the statements. The statements are followed by two conclusions. Find the conclusion which is definitely true.

6. Statements:

A > B = C < D < E > F

Conclusions:

I. F < C

II. A>D

A. If only Conclusion I is true.

B. If only Conclusion II is true.

C. If either Conclusion I or II is true.

D. If neither Conclusion I nor II is true.

E. If both Conclusions I and II are true.

Solution

A > B = C < D < E > F

Conclusions:

For conclusion I -

C < D < E > F - no relation between F and C. I.

F < C (false)

For conclusion II -

A > B = C < D - no relation between A and D. II.

A > D (false)

Hence, neither conclusion I nor II is true.

7. Statements:

A < B > C > D; A > E, D > F

Conclusions:

I. F > B

II. B > E

A. If only Conclusion I is true.

B. If only Conclusion II is true.

C. If either Conclusion I or II is true.

D. If neither Conclusion I nor II is true.

E. If both Conclusions I and II are true.

Solution

A < B > C > D; A > E, D > F

by combining both the statement we get

- E < A < B > C > D > F

Conclusions:

For conclusion I -

B > C > D > F - no relation between B and F I.

F > B (false)

For conclusion II -

E < A < B - B is greater than E.

II. B > E (true)

Hence, only Conclusion II is true.

8. Statements:

A = B < C > D; E > C < F

Conclusions:

I. E > A

II. F > D

A. If only Conclusion I is true.

B. If only Conclusion II is true.

C. If either Conclusion I or II is true.

D. If neither Conclusion I nor II is true.

E. If both Conclusions I and II are true.

A = B < C > D; E > C < F

Conclusions:

For conclusion I -

A = B < C < E - E is greater than A I.

E > A (true)

For conclusion II-

F > C > D

II. F > D (true)

Hence, both Conclusions I and II are true.

9. Which of the following symbols should replace the sign (\$) and (\$) in the given expression in order to make the expression S > J and M \ge J is definitely true? S

 \geq T\$P>K \leq N, O < M = K#J>L

A. =, <

B. >, ≤

C. <, ≥

D. <, ≤

E. >, ≥

Solution

 $S \ge T \ P > K \le N, O < M = K \# J > L$

By replacing the symbols in the place of (>) and $\#(\geq)$ we get

 $S \ge T > P > K \ge J$, hence S > J is definitely true.

 $M = K \ge J$, hence $M \ge J$ is also definitely true.

10. Which of the following symbols should replace the \$ and # in the given expression in order to make the expression L ≥ S and N > T is definitely true?

 $N > O \le L = P \$ T, H > M \le T \# S < N$

A. >, <

B. ≥, ≤

C. >, =

D. <, ≤

E. >, ≥

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Solution

 $N > O \le L = P \$ T, H > M \le T # S < N$

By replacing the symbols in the place of (\ge) and (=) we get

 $N > O \le L = P \ge T, H > M \le T = S < N L = P$

≥ T = S

hence $L \ge S$ is definitely true.

T = S < N hence, N > T is definitely true.

Direction Q (11-15): Study the following information carefully and answer the questions given below:

Eight persons P, Q, R, S, T, U, V and W are sitting in a straight line and facing north direction. Their ages are, 12, 14, 18, 26, 29, 35, 42 and 67. The one who is 12 years old is 4th to the left of the eldest person, who is sitting at the end. The sum of the ages of S and Q is equal to P. S is not the youngest person. S and W are neighbors of Q. R's age is not an even number and he is older than W and younger than U. Only 3 persons are sitting between S and U. Only 2 persons are sitting between Q and T, who is 29 years old. P is not the neighbor of U. R is not sitting to the left of Q.



11. Who among the following sits at the end? A.T B. P C. Q D. S E. W

Solution

T	P	S	Q	W	R	U	V
29	26	14	12	18	35	42	67

12. Who among the following sits third to the left of W?

A. S

B. The one who is 12 years old

C. The one who is 26 years old

D. T

E. U

13. Which of the following pair is neighbor of U?

A. R and W

B. S and P

C. W and V

D.R and V

E. Q and R

14. Who among the following is 14 years old?

A. P

B. Q

C.R

D. U

E. S

15. How many persons are younger than W?

A. 1

B. 2

C. 3

D. 4

E. None

16. If 1 number is added in even digit in the given number 9458732 and 2 is subtracted in odd digit, then which digit is repeated for the maximum time in the newly formed number?

A. 3

B. 2

C. 5

D. 7

E. 4

Solution

Given number - 9458732

9 - 2 = 7

4 + 1 = 5

5-2=38+1=97-2=5

3-2=1

2 + 2 = 4

Thus, newly formed number is – 7539514, so here 5 repeat maximum times in the newly formed number.

17. In a certain code language 'green grass everywhere' is written as 'dik pa sok' and 'cow eats grass' is written as 'nok ta pa'. How is 'cow' written in that code language?

A. nok

B. ta

C. nok or ta

D. Data

inadequate E.

None of these

Solution

green grass everywhere: dik pa sok'

→Green : dik/ sok

→Grass: pa

→Everywhere : sok/ dik cow eats grass : nok ta pa

→Cow: nok/ta →Eats: ta/ nok →Grass: pa

It is clear that cow is written as 'nok' or 'ta'

Directions Q (18-20): Study the following information carefully and answer the questions given below:

Each of the six students got different marks in an exam. D got less marks than only B. E got more marks than only two students. A didn't get less marks than E. C did not get least marks. The one who got second lowest, got 160 marks. A got 205 marks.

18. The one who got maximum marks, got 100 marks more than C. Which of the following mark is got by one who got maximum marks?

A. 225

B. 270

C.260

D. 300

E. None of these

Solution

B>D>A>E>C>F

19. Which of the following is true with respect to F as per the given information?

A. The possible marks, got by F is 165

B. F got minimum marks.

C. Only two students got more marks than F

D. F definitely got more marks than C E.

None of these

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The arrangement is as follows -

B>D>A>E>C>F

Here A got 205 marks and he score more marks than E. E score more marks than C & F. C score 160 marks than F. F score minimum marks.

20. Which of the following may be the possible number of marks which E got?

A. 210

B. 140

C. 185

D. 159

E. None of these

Solution

The arrangement is as follows -

B>D>A>E>C>F

Here A got 205 marks and he score more marks than E. E score more marks than C & F. C score 160 marks than the possible number of marks which E got will be 185.

Direction Q (21-25): Study the following information carefully and answer the question given below: There are eight persons A, B, C, D, E, F, G and H. They are born in the month (Same for each person) of different years i.e. 1976, 1980, 1982, 1990, 1991, 1995, 2000 and 2005. There ages are considered as on the same month of 2017. B is born in odd number year but he is not the youngest. E is 37 years old now. C was born in 1990. G is at least 10 years older than B. D is younger than B and born in odd number year. A is 18 years younger than G. F is older than D but not the older person. Not more than 2 persons are younger than F.

21. Who among the following is youngest person?

A. A

B. C

C. D

D.B

E. G

Solution

Years	Age	Person
2005	12	D
2000	17	A
1995	22	F
1991	26	В
1990	27	С
1982	35	G
1980	37	E
1976	41	Н

22. How many persons are older than C?

A. 2

B.3

C. 1

D. None

E. more than 3

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23. What is the difference of age between F and E?
A.15 years
B. 10 years
C. 30 years
D. 4 years
E. 12 years
24. If all the persons are arrange to their names according to alphabet series from youngest to oldest then how many of them position will remain unchanged?
A. 0
B. 1
C. 2
D. 3
E. 4
25. Who among the following is born in 1982?
A. D
B. G
C. A
D. C
E. H
Direction Q (26-30) : Study the following information carefully and answer the questions given below : Seven persons A, B, C, D, E, F and G attends seminar on different dates starting from 21 st June to 27 th June but not necessarily in the same order. They like different brands laptop, Lenovo, Dell, Apple, Sony, Samsung, Asus, and HP. They have different brands of watch, Sonata, Rolex, Titan, Maxima, Casio, Fossil and Diesel.
The one who has Diesel attends a seminar on an even numbered date. E has Rolex and F doesn't have Maxima. G attends the seminar on the last day. The one who has Diesel likes either Apple or Asus laptop. A has Titan but he doesn't like HP and is not attend the seminar just before or just after B. F likes Dell and attends the seminar three days before the one who likes Samsung. D neither likes Samsung nor Asus laptop. The one who likes HP attends the seminar on 25 th June. B likes Sony wearing also have Sonata watch and not attends the seminar just before or just after F, who attends the seminar on an odd numbered date. The one who likes Apple neither has Casio nor Maxima. B attends the seminar just before D and none of them likes HP. The one who has Casio attends the seminar on the 2 nd day.

26. Who among the following attends the seminar on 3rd day?

A. D

B. The one who likes Lenovo

C.C

D. The one who has Diesel

E. The one who likes Samsung

Date	Person	Laptop	Watch
21st June	В	Sony	Sonata
22 nd June	D	Lenovo	Casio
23 rd June	F	Dell	Fossil
24 th June	С	Apple	Diesel
25 th June	Е	HP	Rolex
26 th June	A	Samsung	Titan
27 th June	G	Asus	Maxima

A. Lenovo-Casio

B. Dell-Sonata C.

Samsung-Rolex D.

Sony-Fossil E. HP-

Rolex

28. How many persons attend th	e s <mark>eminar between t</mark>	he one who likes S	Samsung and the	e one who has
Fossil?				

A. 0

B. 1

C.2

D. 3

E. 4

29. If all the persons rearranged according to their names (alphabetically) from the starting date then who among the following likes Apple?

A. A

B.B

C.C

D. D

E.E

30. Which of the following combination is correct?

A. D-Lenovo-Fossil

B. E-HP-Titan

C. A-Sony-Maxima

D. F-Dell-Diesel

E. A-Samsung-Titan

31. 'B' is related to 'Dell' and 'F' is related to 'Rolex' in the same way then who among the following is related to 'Maxima'?

A. A

B.B

C.C

D. D

E. E

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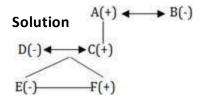
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Directions Q (32-33): Study the following information carefully and answer the questions given below:

- * D is the mother of E, who is the sister of F.
- * A is the father of C. B is wife of A.
- * F is son of C.

32. How is E related to A?

- A. Son
- B. Grandson
- C. Granddaughter
- D. Daughter
- E. None of these



33. How is B related to D?

A. Mother-in-law

- B. Sister
- C. Mother
- D. Can't be determined
- E. None of these

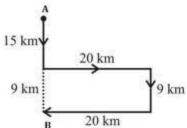
Directions Q (34-35): Study the following information carefully and answer the questions given below: Rahul starts running from point A and runs 15 km towards south. He takes a left turn and runs 20 km. Now he runs 9 km after taking a right turn. He finally takes a right turn and runs 20 km and stops at point B.

How far is point B with respect to point A?

A. 24 km

- B. 40 km
- C. 45 km
- D. 29 km
- E. 49 km

Solution



35. Towards which directions was Rahul moving before he stopped at point B?

- A. North
- B. East

C. West

D. South

E. North-West

English Questions

Direction Q (1-10): Read the passage carefully and answer the question that follow. Certain words are printed in bold to help you locate them while answering some of the question:

Technology can be most broadly defined as the entities, both material and immaterial, created by the application of mental and physical effort in order to achieve some value. In this usage, technology refers to tools and machines that may be used to solve real-world problems. It is a far-reaching term that may include simple tools, such as a crowbar or wooden spoon, or more complex machines, such as a space station or particle accelerator. Tools and machines need not be material; virtual technology, such as computer software and business methods, fall under this definition of technology.

The word "technology" can also be used to refer to a collection of techniques. In this context, it is the current state of humanity's knowledge of how to combine resources to produce desired products, to solve problems, fulfill needs, or satisfies wants; it includes technical methods, skills, processes, techniques, tools and raw materials. When combined with another term, such as "medical technology" or "space technology," it refers to the state of the respective field's knowledge and tools. "State-of-the-art technology" refers to the high technology available to humanity in any field.

Technology can be viewed as an activity that forms or changes culture. Additionally, technology is the application of math, science, and the arts for the benefit of life as it is known. A modern example is the rise of communication technology, which has lessened barriers to human interaction and, as a result, has helped **spawn** new subcultures; the rise of cyber culture has, at its basis, the development of the Internet and the computer. Not all technology enhances culture in a creative way; technology can also help facilitate political **oppression** and war via tools such as guns. As a cultural activity, technology **predates** both science and engineering, each of which formalizes some aspects of technological **endeavor**.

1. What is virtual technology, according to the passage?

A. A space station or par<mark>tic</mark>le accelerator. B.

Computer software and business methods.

C. Technical methods, skills, processes, techniques, tools and raw materials. D. The state of the respective field's knowledge and tools.

E. None of the above.

Solution:

As mentioned in the last line of the first paragraph, virtual technology refers to the act of creating virtual version such as computer software and business methods. Hence B is the correct choice.

2. How do developments of technology bring out cultural changes?

A. It has lessened barriers to human interaction and, as a result, has helped spawn new subcultures; the rise of cyber culture has, at its basis, the development of the Internet and the computer.

- B. It combines resources to produce desired products, to solve problems, fulfill needs, or satisfies wants.
- C. Technology refers to tools and machines that may be used to solve real-world problems.
- D. As a cultural activity, technology predates both science and engineering.
- E. None of the above.

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According to the paragraph, development of technology affects not only one aspect but changes all aspects like social, cultural and political. Advancement in technology decreases barriers to human interaction. Consequently, new subculture arises in the society. Hence A is the correct choice.

- 3. Which two fields have been stated as an example which when combined with technology state the respective field's knowledge and tools?
- A. Virtual technology, space technology.
- B. Science, engineering technology.
- C. Medical technology, space technology.
- D. All of the above.
- E. None of the above.

Solution

It can be inferred from the following statement of the passage, 'When combined with another term, such as "medical technology" or "space technology," it refers to the state of the respective field's knowledge and tools.'

4. Pick out the word that is most nearly the same in meaning as the word printed in BOLD type, as used in the passage.

SPAWN

A. Generate

- B. Beget
- C. Ruin
- D. Halt
- E. None of these

Solution

Spawn means to produce. Corresponding to it, contextually generate is the most suitable response.

5. Pick out the word that is most nearly the same in meaning as the word printed in BOLD type, as used in the passage.

OPPRESSION

- A. Persecution
- B. Democracy
- C. Emergency
- D. Fair
- E. B and D.

Solution

The term Oppression means unjust treatment, which is similar to the word 'Persecution'. Fair is an opposite of Oppression. Democracy means government by the people especially rule of majority. Emergency means an often dangerous situation requiring immediate action. Hence A is the correct choice.

6. Pick out the word that is most opposite in meaning as the word printed in BOLD type, as used in the passage.

ENDEAVOR

- A. Negligence
- B. Avocation
- C. Contemplate

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D. Exertion

E. B and D.

Solution

Endeavor means to try hard to do or achieve something. All other options are related to endeavor in some or the other way. Negligence is an opposite word. Negligence means avoid something or try not to get something. Hence A is the correct choice.

7. Pick out the word that is most opposite in meaning as the word printed in BOLD type, as used in the passage.

PREDATES

A. Antedate

B. Follow

- C. Antecede
- D. Forego
- E. None of the above

Solution

Predates means to put the date on something that is earlier than the current date. Follow is the opposite word. Follow refers to postdate which means occur or come later than. Other words are synonyms of Predate. Antedate means to come before or come earlier in date. Antecede means precede which refers to come before (something) in time or order. Forego also means precede or to go before. Hence B is the correct choice.

8. According to the passage, how is technology beneficial for human being?

A. It helped spawn new subcultures.

B. Technology can be used to solve real-world problems. C. It has lessened barriers to human interaction.

D. Only A and B

E. All the above

Solution

All the statements can be inferred from the passage. Hence, all of them define technology's benefits to human beings.

9. According to the passage, why is development of technology referred to as a problem solving tool?

A. It consists of material and immaterial entities which help in problem solving.

B. It is a far-reaching term that includes complex tools which help to solve the problems. C. It combines resources to produce desired products and to solve problems.

D. Only B and D

E. All the above

Solution

It can be inferred from the first paragraph of the passage that development of technology is referred to as a problem solving tool because it contains all the material and immaterial entities which help in solving problems. Hence option A is the correct choice.

10. According to the author, the central idea of the passage is to....

- A. Demonstrate award winning achievements of technology.
- B. Support space technology.

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- C. Criticize the technological changes.
- D. Highlight the positive changes brought by technology.
- E. All the above.

In the given passage, the author highlights the positive impact of technology in our life. Also, the author explains about the advancement of technology which refers to tools and machines that may be used to solve real-world problems. It includes simple tools as well as complex method. So, option D covers the central idea of the passage most suitably. All the other options are related, but do not cover the passage as a whole. Hence D is the correct choice.

Directions: Q (11-20) In the passage given below there are blanks, each followed by a word given in the brackets. Every blank has five alternative words given in options. Find the word which best suits the respective blank. If the given word suits the blank, mark 'no correction required' as the answer.

The widespread consternation over the rupee hitting a 27-month low against the dollar is unwarranted, for the Indian currency has been among the better (11) [hiking] currencies over the last couple of years. While other (12) [trickling] market currencies such as the Russian rouble and the Brazilian real are down more than 20 per cent this year, the rupee is lower by just 6 per cent. This follows a strong performance in 2014, when the Indian currency lost just 1.2 per cent against the greenback. It is obvious that the rupee is in a sweet spot (13) [peculiar] to its emerging market peers, which have been hit hard by the (14) [ascent] in commodity prices. India, on the other hand, has benefited from this fall. The crash in crude prices combined with the checks on gold imports have helped (15) [recede] the current account deficit to just 1.27 per cent of GDP. Strong foreign inflows — from both portfolio and direct investments — have pushed India's forex reserves to \$351 billion; we are among the few countries that have (16) [considered] to increase forex reserves since the middle of last year. These reserves provide the Indian central bank with (17) [ammunition] to protect the rupee from short-term volatility that may arise once the Federal Reserve goes through with its long anticipated rate hike. Since the Fed has given financial markets sufficient time to (18) [discern] the move, a 25 basis points move is not likely to cause too much turbulence. True, some short-term money will flow out of the equity markets; foreign portfolio investors have (19) [turned] net sellers since November. But long-term investors are likely to stay put due to the better growth (20) [contrariety] of Indian companies. The superior real yield, falling inflation and a stable rupee also make a strong case for staying invested in Indian debt instruments.

11. Choose the correct answer from the given options to fill the blanks which are numbered.

A. moving

B. performing

- C. doing
- D. stagnating
- E. No correction required

Solution

'performing' is the most suitable response. It refers to operating/functioning.

12. Choose the correct answer from the given options to fill the blanks which are numbered.

A. emerging

- B. on-going
- C. suiting
- D. menacing
- E. No correction required

'Emerging' is the most suitable response. It refers to developing/rising.

13. Choose the correct answer from the given options to fill the blanks which are numbered.

A. known B.

employed C.

straight

D. relative

E. No change required

Solution

The statement highlights a comparison. Corresponding to that, 'relative' is the most suitable response.

14. Choose the correct answer from the given options to fill the blanks which are numbered.

A. spree

B. rise

C. plunge

D. demolition

E. No correction required

Solution

Since the passage talks about the downfall in the prices, 'plunge' is the most suitable response. It refers to a quick drop.

15. Choose the correct answer from the given options to fill the blanks which are numbered.

A. boost

- B. recover
- C. maintain
- D. sustain
- E. No correction required

Solution

According to the context of the theme, boost is the most suitable response.

16. Choose the correct answer from the given options to fill the blanks which are numbered.

A. managed

- B. agitated
- C. breached
- D. stood
- E. No correction required

Solution

'Managed' is the most suitable response to make the sentence correct.

17. Choose the correct answer from the given options to fill the blanks which are numbered.

A. gadget

B. thing C.

product

D. process

E. No correction required

The given word suits the blank well. Hence, no correction is required.

- 18. Choose the correct answer from the given options to fill the blanks which are numbered.
- A. hinder
- B. assimilate
- C. nullify
- D. ostracize
- E. No correction required

Solution

Assimilate is the most suitable response. It means to comprehend/accommodate.

- 19. Choose the correct answer from the given options to fill the blanks which are numbered.
- A. spanned
- B. produced
- C. acquired
- D. raised
- E. No correction required.

Solution

The given word is correct. Hence no correction is required.

- 20. Choose the correct answer from the given options to fill the blanks which are numbered.
- A. features
- B. plight
- C. matters
- D. prospects
- E. No correction required

Solution

'Prospects' is the most suitable response.

Directions Q (21-30): Which of the phrases (A), (B), (C) and (D) given below each sentence should replace the phrase printed in **bold** type to make the sentence grammatically correct. If the sentence is correct as it is, mark (E), i.e. 'No correction required' as the answer.

- 21. When we went to wonder of worlds, I loved that **really big old silver antique car** that was parked in the parking lot of the East India Mall.
- A. Really old silver big antique car
- B. Really big silver old antique car
- C. Really big silver antique car
- D. Really big old silver antique car
- E. No correction required

Solution

As a general rule, adjectives are usually placed in this order:

Opinion \rightarrow size \rightarrow quality \rightarrow age \rightarrow shape \rightarrow color \rightarrow participle forms \rightarrow origin \rightarrow material type \rightarrow purpose

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- 22. Each individual knows how to **protected on own** life and it should be left to his discretion.
- A. Protected by own
- B. Protect by own
- C. Protect his own
- D. Protected his own
- E. No change required

The sentence discusses about individuals and therefore instead of the preposition we should use a pronoun. Therefore, choice "C" is correct.

- 23. The last few decades has seen a great deal of political instability in India.
- A. Decade had seen
- B. Decade has seen
- C. Decades have seen
- D. Decade have seen
- E. No change required

Solution

We are talking about decades in this sentence and therefore, we should use "have" instead of "has". Hence, choice "C" is correct.

- 24. He admired the speed with which Koti completed the work and appreciating the method adopted by him
- A. appreciate the method being adopted
- B. appreciated the method adopted
- C. appreciate the method of adoption
- D. appreciate the adopting method
- E. No correction required

Solution

The sentence is in Simple Past Tense and so second form of verb is required.

- 25. I had met him after the party where he had been given an inspiring speech
- A. when he had
- B. where he would have
- C. in which he was given
- D. where he had
- E. No correction required

Solution

Use of 'been' is superfluous.

26. After the success of our project we have been receiving **more requests than** we do not have the resources to handle them.

A. many requests but

- B. most of the requests
- C. more requests that
- D. too many requests
- E. No correction required



Replace 'more requests than' by many requests but.

- 27. The poor Brahmin led a hand to mouthful existence and could use any job which paid him a little.
- A. handful to mouthful existence
- B. hand to mouth existence
- C. handing for mouthful existing
- D. hand and mouth exist
- E. No correction required

Solution

Replace hand to mouthful existence by hand to mouth existence means having or providing only the bare essentials not more than it.

- 28. In order to **earning decent living** we need to have a good job which pays a substantial amount of money.
- A. earned decency life
- B. earning decency live
- C. earn a decent living
- D. earned decently life
- E. No correction required

Solution

Replace earning decent living by earn decent living because it should be used after in order to.

- 29. We went to the famous restaurant to eat and were served piped hot food.
- A. served piping hotter
- B. serving pipe hot
- C. served piping hot
- D. serve pipe hotten
- E. No correction required

Solution

Replace 'served piped hot' by 'served piping hot' which is used for very hot food or beverage.

- 30. When he fell down the ditch, he shouted with all his might so that to catch someone's attention.
- A. such that to catch
- B. so as to catch
- C. so that to catching
- D. so then to catch
- E. No correction required

Solution

Here, 'so as to catch' should be used to make the sentence grammatically correct.

