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CASBUETS DATA INTERPRETATION QUESTIONS WITH SOLUTIONS BY GOVERNMENTADDA.COM

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Caselet DI Tricks & Tips

In caselets, the mathematical data is represented in the form of a paragraph. Hence extracting data and establishing relationships between different data values becomes difficult. However caselets are very popular with CAT examiners.

Positives Negatives

- 1. Most caselets seem difficult due to lack get down to solving them.
- 1. Data values are not easily available and hence of data values, but are very easy when you you need to have a lot of patience to decipher a lot of it after reading the passage.

Shortcuts to crack DI sets containing Caselets

1. Represent the data in a form such that you can easily extract the data for the questions that follow

Let us look at this CAT set to understand this.

Help Distress (HD) is and NGO involved in providing assistance to people suffering from natural disasters. Currently, it has 37 volunteers. They are involved in three projects: Tsunami Relief (TR) in Tamil Nadu, Flood Relief (FR) in Maharashtra and Earthquake Relief (ER) in Gujarat. Each volunteer working with Help Distress has to be involved in at least one relief work project.

- A maximum number of volunteers are involved in the FR project, Among them, the number of volunteers involved in the FR project alone is equal to the volunteers having additional involvement in the ER project.
- . The number of volunteers involved in the ER project alone is double the number of volunteers involved in all the three projects.
- 17 volunteers are involved in the TR project.
- . The number of volunteers involved in the TR project alone is one less than the number of volunteers involved in the ER project alone.
- Ten volunteers involved in the TR project are also involved in at least one more project.

The above set can be represented in the form of a Venn Diagram having three sets TR, FR and ER. Similarly, you can represent data in the form of a Table or a Network. The idea is to help us get the required data with a single glance upon reading the question.

2. Always start a caselet with a value that you can directly plug in.

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Have a look at this CAT 1991 caselet:

Ghosh Babu deposited a certain sum of money in a bank in 1986. The bank calculated interest on the principal at 10 percent simple interest, and credited it to the account once a year. After the 1st year, Ghosh Babu withdrew the entire interest and 20% of the initial amount. After the 2nd year, he withdrew the interest and 50% of the remaining amount. After the 3rd year, he withdrew the interest and 50% of the remaining amount. Finally after the 4th year, Ghosh Babu closed the account and collected the entire balance of Rs. 11,000.

The only value that one can see in the entire caselet is that at the end, he had a balance of Rs.11,000/-. This is good place to start this caselet from. Try to work out other values from this value now.

How to Solve Caselet / Paragraph DI Questions

Let us now understand, what exactly is a Caselet DI.

Data interpretation normally consists of questions involving pie charts, bar graphs, line graphs, radar graphs pr table with the required information for solving the questions. In a paragraph type data interpretation question, a set of information is provided in a paragraph form. It doesn't consist of any charts or tables. You have to read the given information carefully and draw a suitable table/chart listing out all the given data to answer the questions.

How to solve caselets/paragraph data interpretation questions?

Undermentioned steps will help you all while solving questions of Caselet or paragraph based Data Interpretation questions.

- 1. Solving caselets involves a thorough understanding of the subject matter of the passage given. Read the paragraph with utmost care and analyse what the question demands. Basically be clear on what is given and what is asked.
- 2. Try to underline all the important points in a caselet while reading it. You can always use symbols in place of names of persons, places etc to make your work a lot easier. Focus only on useful data and don't do unnecessary approximations just to simplify the task.
- 3. With all the important information in your hand, try to represent the data in graphical or tabular form. Represent the data in a pie chart, bar graph, table etc depending upon the feasibility and the motive of the question.
- 4. Read the figures closely. You can use options and approximations to avoid tedious and lengthy calculations. If the question asks for relative values, there is no need for find the accurate values. Use approximation but never over-approximate.

Let us illustrate this with an example.

Question: Based on the following passage, answer the questions which follow

A took a voluntary retirement on February 1st, 2014 and received 10 lakhs as retirement benefits. As on that day he also had Rs 3 lakhs in the bank. Of the total amount he had, 60% was invested in the bank which gives an annual compounded interest of 15%, for three years. Of the remaining part, half was invested in shares, which appreciated by 15% in the first year, 6% in the second year and depreciated by 10% the next year. The remaining part was invested in real estate. The real estate values increased by 10% in the first year, reduced by 10% in the next year and remained steady in the third year.

- 1. What was the value (in rupees lakhs) of A's investment on February 1st, 2015?
- A) 21 lakhs
- B) 14.82 lakhs
- C) 15.36 lakhs
- D) 15.97 lakhs

Solution:

Total amount 1^{st} February 2014 = 10 + 3 = Rs 13 lakhs

Bank	Share	es	Real estate	2
7.8 lakhs	2.6		2.6	

For 1^{st} year, value in bank will increase by 15%. So, total value will be 1.15 times of previous value. Hence, value after 1 year in bank = 7.8*1.15 = 8.97

For the first year, share value increases by 15%. Hence, value after 1 year in shares = 2.6*1.5 = 2.99

Similarly, Value after 1 year in real estate = 2.6*1.1 = 2.86

Total value in 2015 = Rs 14.82 lakhs

2. What was the approximate value (kin rupees lakhs) of his investment on 1st February 2017?

- A) 16.21 lakhs
- B) 16.82 lakhs
- C) 17.286 lakhs
- D) 17.87 lakhs

Solution:

Money in bank = $7.8*(1+0.5)^3 = 7.8*1.52=11.86$ (use compound interest formula for three years)

For the first year, share value increases by 15%, for the second year it increases by 6% and for the third year it decreases by 10%. So, value of share at the end of three years is 2.6*1.1*1.06*0.9 = 2.852

Similarly, Value of real estate = 2.6*1.1*0.9 = 2.574

Total value = 17.286

3. In which year did the investment show the maximum increase?

- A) First
- B) Second
- C) Third
- D) Both (A) and (C)

Solution:

Value of investment on 1st February 2014 = 13 lakhs

Value of investment on 1st February 2015 = 14.82 lakhs

Value of investment on 1st February 2016 = 16.063

Value of investment on 1st February 2017 = 17.286

It is clearly seen that maximum %increase is in 2015.

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Some points to remember

- 1. Improve your calculation speed: Caselets being calculation intensive, you have to be good with your calculations. Learn speed math techniques and practice them regularly. The more you practice the faster you become in calculations. After a considerable amount of practice, you can do the calculations in your mind. This is going to save a lot of your precious time in exam conditions. So build a intuitive number sense.
- 2. Be thorough with the arithmetic related topics like percentages, interests, ratios and proportions as caselets are often based on these type of concepts. Otherwise you will face a lot off difficulty tackling these questions. Get the basics; understand the difference between growth and growth rate, average growth rate, cumulative average growth rate, market share by volume and market share revenue etc.
- 3. Practice makes a man perfect. The more you practice these types of questions, the easier the questions will become. Practice questions will improve your speed and accuracy. While attempting these type of questions in exam, always try to choose the questions which will give you the answer with lesser effort, or you will end up spending a significant amount of time on lengthy calculations.

Directions: Refer to the information given below and answer the questions that follow.

There are 4 players in the cigar market of the Dominician Republic: Amergio, Byford, Christie's and Ducatti. The sales in 1995 are of \$ 100,000 (100,000 boxes of cigars) - the volumes shared by Amergio, Byford, Christie's and Ducatti are in the ratio of 1: 2: 3: 4 and the sales is in the ratio of 4:3:2:1 respectively. The sales in 1996 show a sharp drop - both in terms of volume and in dollars. In volume terms, the demand fell by 60% and in dollar terms the figure was 50%. The shares of Amergio, Byford, Christie and Ducatti in volume terms was 2:2:3:3 and that of the ratio of prices charged was 9:6:3:1. The market picked up dramatically in 1997 - the volumes were the sum total sold in 1995 and 1996 and the sales rose by 390% over that of 1996. For 1997, sales by Christie have amounted to \$84,000, which was 20% more than that made by Amergio and thrice the sales of Ducatti. The volumes share in that year was in the ratio of 1:3:4:2.

Example 1: What was the ratio of the prices charged by Amergio, Byford, Christie's and Ducatti in 1997?

Solution: Summarising the whole information, we can deduce the following:

1. Value

For year 1995: Sales (in value) 100,000 \$

Ratio of value for:

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Amergio: Byford: Christie: Ducatti= 4 : 3 : 2 : 1 = 40,000 : 30,000 : 20,000 : 10,000

For year 1996: Sales (in value) = 50,000\$

For year 1997: Total Sales (Value) = $50 \times 4.9 = 245,000$

Example 2: In which year was Sohan born?

A. Sohan at present is 25 years younger to his mother.

B. Sohan's Sister, who was born in 1964, is 35 years younger to his mother.

Solution: From both I and II, we find that Sohan is (35 - 25) = 10 years older than his sister, who was born in 1964. So, Sohan was born in 1954.

Since, we are getting unique answer from both statements when combined, so the **answer is** 3rd option.

Data Sufficiency: Key Learning

- In this article, you learned how a Data Sufficiency question is asked and what steps are
 to be followed in order to solve these questions systematically.
- In order to get hold on such questions you need to solve variety of questions to get exposure to different kind of Data Sufficiency questions. Read the question carefully and then solve each statement individually and combine them if required.

More Tricks To Solve Caselet DI With Example

Caselet DI is trending these days and whenever anything starts trending, we must know about that.

Caselet DI is not new or not even out of way. It is just a mathematical form of English Comprehension. In Caselet DI, a long paragraph is given and on the basis of that, some questions are asked. Isn't it English Comprehension?

- In a given paragraph of Caselet DI, lots of information is given.
- You have to read the paragraph carefully and then you have to note down all the key information as short as possible.
- The given information will let you draw some diagrams such as Venn diagram, tabular chart or any other diagram.

The difference between simple DI and Caselet DI is - In simple DI, information is already given in diagrammatical forms but in Caselet DI, you have to draw a diagram on the basis of given information.

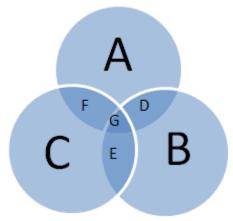
Before start solving Caselet DI, you must have knowledge of following things.

- How to draw a diagram on the basis of given information.
- Which diagram is the need of the question?
- Knowledge of Venn diagram.
- Knowledge of the relationship between fractions and their percentage forms.
- Knowledge of simplification and approximation.
- If the question belongs to CI & SI or Profit & Loss or Speed, time and distance then you must have knowledge of basic formulae of these topics.
- Must have knowledge of Ratio and Proportion.

To make few things more clear, let us take a simple question:

In a college, some students like English, some like Maths and some like Science. Some like both English and Maths but not Science, some like both Maths and Science but not English and Some like both Science and English but not Maths. Some like all three subjects.

The given information can be simply put in a Venn diagram as follow:



- A, B and C are representing the whole circle.
- A means some like English, B means some like Maths and C means some like Science.
- Region D means some like both English and Maths but not Science, region E means some like both Maths and Science but not English and region F means some like both Science and English but not Maths.
- Region G means some like all these three subjects.

After arranging the information in Venn diagram, we conclude following more information:

Students who like only English= A-(D+F+G).

- Students who like only Maths= B-(D+E+G).
- Students who like only Science= C-(E+F+G).

NOTE: Practice more problems so that you may know the different forms of Caselet DI. While solving, must follow the above steps.

A Caselet Question Asked In BOB PO Exam, 2017

A total of 1650 employees is working in a company in different departments. The ratio of male employees to female employees in the organisation is 86:79. There are total 5 departments in the company i.e. Product Development, Sales and Marketing, R & D and Reinvestment, Finance and HR. Total 198 males work in Product Development department. 18% employees work in Sales and Marketing department in which male to female ratio is 5:4. In Finance Department, 77 males are working and the number of females in this department is 5/7th of the number of males. The number of males in Sales and Marketing department is equal to the number of females in Product Development department. The number of males in Finance department is half of the number of males in HR department. Male to female ratio in R & D and Reinvestment department is 14:19.

- 1. The number of males in R & D and Reinvestment department is how much more than females in Product Development?
- 2. Female in R & D and Reinvestment department is what % of the total number of females in the company (approximately)?
- 3. The number of females in Finance department is what percent less than the number of females in Product Development department?

SOLUTION:

Step 1

	PRODUCT DEVELOPMENT	R & D AND REINVESTMENT	FINANCE HR	TOTAL
MALE				
FEMALE				
TOTAL				1650

Step 2

- Note down the given data and make calculation as per as the requirement
- TOTAL=1650
- M:F=86:79 then we can find the number of males and females as follows:
- 86+79=165= 1650,
- 1=10,
- 86=860 (total number of male),

- 79=790 (total number of female).
- Males in Product Development department= 198
- 18% employees work in Sales and Marketing department i.e. (18/100)*1650=297;
- Male to female ratio is 5:4 in the Sales and Marketing department, so 5+4=9=297.
- Therefore, number of male in this department=5*33=165 and the number of female in this department=4*33=132.
- Number of Male in Finance department=77 and female in this department is 5/7th of male. So number of female in this department= (5/7)*77=55.
- Number of males in Sales and Marketing department is equal to the number of females in Product Development department. So number the number of female in Product Development = 165.
- Number of males in Finance department is half of the number of males in HR department. So the number of male in HR department=2*77=154.
- Male to female ratio in R & D and Reinvestment department is 14:19.

Step 3

Now put these data in the table.'

	PRODUCT DEVELOPMENT		R & D AND REINVESTMENT	FINANCE	HR	TOTAL
MALE	198	165		77	154	860
FEMALE	165	132		55		790
TOTAL	363	297		132		1650

- Number of males in R & D and REINVESTMENT= 860-(198+165+77+154) = 266.
- 14=266 so 19=19*19=361 (Number of female in R & D and REINVESTMENT).
- Number of female in HR department= 790-(165+132+361+55)=77.

Step 4

Now put these data in remaining blanks in the table:

	PRODUCT	SALES &	R & D AND	FINANCE	HR	TOTAL
	DEVELOPMENT	MARKETING	REINVESTMENT			
MALE	198	165	266	77	154	860
FEMALE	165	132	361	55	77	790
TOTAL	363	297	627	132	231	1650

Step 5 O V35 R N V35 N X D D X CO V

1) Male in R & D and Reinvestment=266.

Female in Product Development=165.

So, the number of males in R & D and Reinvestment department is more than females in Product Development= 266-165=101.

2) Female in R & D and Reinvestment=361.

The total number of females=790. So, (361/790)*100=45.7%.

3) Female in Finance Department=55.

Female in Product Department=165.

So, $\{(165-55)/165\}*100=(1/3)*200=33(1/3)\%*2=66(2/3)\%$ (use the concept of percentage and fraction)

Caselet seems like a word problem but it is actually data interpretation. In a simple language we may call it an English comprehension. When we deduce the caslete problems, it becomes tabular DI or Venn diagram DI or both. It is easy to solve if you follow the below steps.

<u>Step-1</u> Read the given paragraph thoroughly.

Step-2 Then try to note down each and every data.

<u>Step-3</u> Then deduce these data in a graphical form like tabular, Venn diagram or both.

Step-4 Now you can easily answer the questions asked.

To make it clear, I am solving a caselet problem asked in SBI PO mains.

In a medical college there are 1600 students studying Dentistry and Homeopathy. Each student from each course knows one or more languages out of English, Hindi and Bengali. 45% of the students study Dentistry and the remaining students study Homeopathy. Out of the students studying Dentistry, boys and girls are in the ratio 5:3. Out of the boys studying Dentistry, 16% know only English, 10% know only Hindi and 4% know only Bengali. 24% know English as well as Hindi, 20% know English as well as Bengali and 14% know Hindi as well as Bengali. The remaining boys know all the three languages.

Out of the girls studying Dentistry, 20% know only English, 10% know only Hindi and 10% know only Bengali. 20% know English as well as Hindi, 20% know English as well as Bengali and 10% know Hindi as well as Bengali. The remaining girls know all the three languages.

Out of the students studying Homeopathy, boys and girls are in the ratio 4:7. Out of the boys studying Homeopathy, 20% know only English, 15% know only Hindi and 5% know only Bengali. 15% know English as well as Hindi, 25% know English as well as Bengali and 10% know Hindi as well as Bengali. The remaining boys know all the three languages.

Out of the girls studying Homeopathy, 15% know only English, 15% know only Hindi and 5% know only Bengali. 20% know English as well as Hindi, 20% know English as well as Bengali and 15% know Hindi as well as Bengali. The remaining girls know all the three languages.

Questions:

- 1) How many students studying Dentistry know only either English or Hindi?
- 2) How many students in the college know all the three languages?
- 3) What percent of the total number of girls in the college know Bengali?
- **4)** How many students studying Homeopathy do not know English?

5) Out of the students studying Homeopathy, what is the ratio of the number of boys knowing English to the number of girls knowing Hindi?

Solution:

Total number of students=1600.

Number of students in Dentistry= 45% of 1600= 720.

Number of students in Homeopathy= 1600-720=880.

Ratio of boys and girls studying Dentistry= 5:3.

Number of boys studying Dentistry= (5/8) * 720= 450.

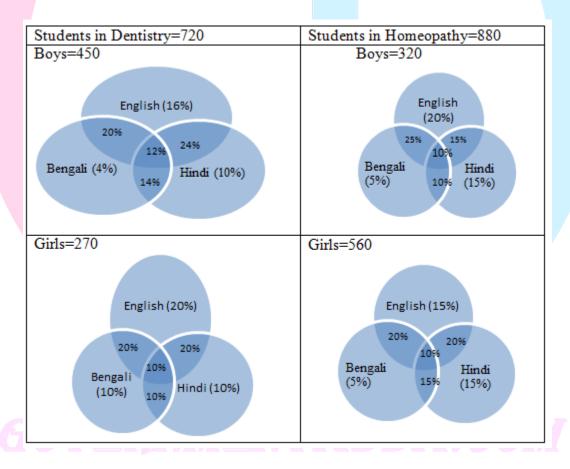
Number of girls studying Dentistry= (3/8) * 720= 270.

Ratio of boys and girls studying Homeopathy= 4:7.

Number of boys studying Homeopathy= (4/11) * 880 = 320.

Number of girls studying Homeopathy= (7/11) * 880= 560.

Now make a diagram to put these values.



1) 16% of 450 + 10% of 450= 117.

20% of 270 + 10% of 270= 81.

On adding these two, we get 198.

Note: In case of either or, we use addition concept.

- 2) 12% of 450 + 10% (320+560+270) =169.
- **3)** [(50% of 270 + 50% of 560) /(270 +560)] *100=50%.
- **4)** 30% of 320 + 35% of 560= 292.
- **5)** (70% of 320)/(60% of 560)= 2:3.

Example: Data Interpretation Questions on caselets

A school has 400 students- boys and girls, who are in the ratio of 3:5. The students speak Hindi, English or both the languages. 12% of the boys speak only Hindi, 22% of the girls speak only English, 24% of the total students speak only Hindi and the number of boys speaking both the languages is six times the number of boys speaking only Hindi.

- 1) How many boys speak Hindi?
- 2) How many girls speak only Hindi?
- 3) How many students speak English?
- 4) The number of girls speaking only Hindi is what percent of the total number of students speaking only Hindi?
- 5) What is the ratio of the number of boys to the number of girls speaking both the languages

Solution:

Information analysis –

Total Number of students = 400

Ratio of boys and girls; B: G = 3:5

Number of boys = $3/8 \times 400 = 150$

Number of girls = 5/8 x 400 = 250

Organise the data in a systematic order. Here, we have arranged them in a form of table.

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Only Hindi Only English Both the languages

Number of 12% of 150 = 18 150 - 18 - 108 = 24 $6 \times 18 = 108$

Boys(150)

Number of Girls 96 - 18 = 78 22% of 250 = 55 250 - 78 - 55 = 117

(250)

Total number of

students 24% of 400 = 96

(400)

Question 1: How many boys speak Hindi?

Step 1:

Solution:

In this question, we need to calculate the percentage of boys who speak Hindi. It means that we need to calculate the percentage of boys who speak only Hindi and boys who speak Hindi + English.

Step 2:

Number of boys who speak only Hindi = 18

Number of boys who speak Hindi + English = 108

18 + 108 = 126

Therefore, the number of boys who speak Hindi are 126

Question 2: How many girls speak only Hindi?

Solution:

Step 1:

In this question, we need to calculate the number of girls who speak only Hindi.

From the table above, we get to know that number of girls who speak only Hindi are 78.

Therefore, the number of girls who speak Hindi are 78.

To have an edge over data interpretation questions, practice more questions from data interpretation.

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Question 3:How many students speak Engli	sh?		
Solution:			
Step 1:			
In this question, we need to calculate the nutring the number of students who speak only Hin	-		_
Total number of students – Number of stud	ents who	speak	only Hindi
400 – 96 = 304			
Therefore, the number of students who spec	ak Englis	sh are 3	04.
Question 4: The number of girls speaking or students speaking only Hindi?	nly Hindi	is wha	t percent of the total number of
Solution:			
Step 1:			
Number of girls who speak Hindi – 78 [x]			
Total number of students who speak only H	indi – 96	[y]	
As we need to find the percentage change v	ve know	that	
x/y x 100			
Step 2:			
78/96 x 100			
81.25%			
Therefore, 81.25% is the percentage change	2.		
Question 5: What is the ratio of the number languages?	r of boy:	s to the	number of girls speaking both the
Solution:			
Step 1:			

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Number of boys speaking both the languages = 108

Number of Girls speaking both the languages = 117

The ratio of the number of boys who speak both the languages: Number of girls who speak both languages

= 108: 117

Step 2:

By further simplification we get,

12:13

Th<mark>erefore,</mark> the ratio of boys is to girls who speak both the languages are 12:13.

Practice Problems For Caselet DI

Example 1:

Directions for Q. 1 to 5: Refer to the following information and the answer the following questions.

People Power Corporation presently employs three Managers (A, B and C) and five recruitment agents (D, E, F, G and H). The company is planning to open a new office in San Jose to manage placement of software professionals in the US. It is planning to relocate two of the three managers and three of the five recruitment agents to the office at San Jose. As it is an organization which is

highly people oriented the management wants to ensure that the individuals who do not function well together should not be made as a part of the team going to the US.

The following information was available to the HR department of People Power Corporation.

- Managers A and C are at each others throat and therefore cannot be sent as a team to the new office.
- C and E are excellent performers in their own right. However, they do not function together as a team. They should be separated.
- D and G have had a major misunderstanding during the last office picnic. After the picnic these two have not been in speaking terms and should therefore not be sent as a team.

- D and F are competing for a promotion that is due in another 3 months. They should not be a team.
- Q1. If D goes to the new office which of the following is (are) true?
- I. C cannot go II. A cannot go III. H must also go
- (a) I only
- (b) II and III only
- (c) I and III only
- (d) I, II and III
- 2. If A is to be moved as one of the Managers, which of the following cannot be a possible working unit?
- (a) ABDEH
- (b) ABFGH
- (c) ABEGH
- (d) ABDGH
- 3. If C and F are moved to the new office, how many combinations are possible?
- (a) 4
- (b) 1
- (c) 3
- (d) 5
- 4. Given the group dynamics of the Managers and the recruitment agents, which of the following is sure to find a berth in the San Jose office?
- (a) B
- (b) H
- (c) G
- (d) E
- 5. If C is sent to the San Jose office wh<mark>ich me</mark>mber of the staff cannot go with C?
- (a) B
- (b) D
- (c) G
- (d) F

ANSWERS: 1. (c) 2. (d) 3. (b) 4. (a) 5. (b)

Example 2

Ghosh Babu took voluntary retirement in Dec. 1991 and received a certain amount of money as retirement benefits. On Jan 1, 1992, he invested the entire amount in shares. At the end of the month, he sold all his shares and realised 25% profit. On Feb 1, he reinvested the entire amount in shares which he sold at the end of the month at a loss of 20%. Again, he invested the entire

amount on Mar 1 in a new company. At the end of the month, he sold the new company to a friend and realised a profit of 20% in the process. He invested the entire amount in shares on Apr 1, which he sold at the end of the month for Rs. 1,08,000 incurring a loss of 10%.

- 1. What is the amount of retirement benefits received by Ghosh Babu?
- a) Rs. 1,08,000
- b) Rs. 1,25,000
- c) Rs. 1,20,000
- d) Rs. 1,00,000
- 2. The percentage profit received by Ghosh Babu between Jan 1 and Apr 30 is:
- a) 8.00%
- b) 15.00%
- c) 10.00%
- d) None of these
- 3. The amount of loss incurred by Ghosh Babu based on his operation in Apr 1992 is:
- a) Rs. 25,000
- b) Rs. 12,000
- c) Rs. 20,000
- d) Rs. 8,000
- 4. The maximum amount invested by Ghosh Babu in any one month was in:
- a) January
- b) February
- c) March
- d) April

Answers:

1. d Let the amount received by Ghosh Babu in Dec. 1991 be Rs. x, as retirement benefits:

Therefore, investment in the month of Jan 1992 = 100

Profit of 25% at the end of Jan 1992.

Hence, investment in the month of Feb 1992 = 125

Loss of 20% at the end of Feb 1992

Hence, investment in the month of March 1992 = 100

Profit of 20% at the end of March 1992

Hence, investment in the month of April 1992 = 120

Loss of 10% at the end of April 1992

Therefore the amount left at the end of April 1992 = 108

Amount at the end of April 1002 = Rs. 1,08,000

Therefore, simply equating figures, he would have started with Rs 1,00,000

2. a % Profit between Jan 1 and Apr 30 = (1.08x - x/x) X 100

3. b Investment in the month of April = Rs. 1,20,000 Amount received at end of April = Rs. 1,08,000 Therefore, Loss = Rs. 12,000

4. b Maximum amount invested by Ghosh Babu is in the month of February = Rs. 1,25,000

Directions: (1-5) Study the information carefully to answer the questions that follow

A school consisting of a total of 1560 students has boys and girls in the ratio of 7:5 respectively. All the students are enrolled in different types of hobby classes, viz., Singing, Dancing and Painting. One-fifth of the boys are enrolled in only Dancing classes. Twenty per cent of the girls are enrolled in only Painting classes. Ten percent of the boys are enrolled in only Singing classes. Twenty-four per cent of the girls are enrolled in both Singing and Dancing classes together. The number of girls enrolled in only Singing classes is two hundred per cent of the boys enrolled in the same. One-thirteenth of the boys are enrolled in all the three classes together. The respective ratio of boys enrolled in Dancing and Painting classes together to the girls enrolled in the same is 2:1 respectively. Ten per cent of the girls are enrolled in only Dancing classes whereas eight per cent of the girls are enrolled in both Dancing and Painting classes together. The remaining girls are enrolled in all the three classes together. The number of boys enrolled in Singing and Dancing classes together is fifty per cent of the number of girls enrolled in the same. The remaining boys are enrolled in only Painting classes.

1.	Total n	umber of g	irls enrolled in	Singing i	s appro	ximate	ly what pe	r cent of the	e total	number
oj	f studen	its in the so	chool?							

- (1)37
- (2) 19
- (3) 32
- (4) 14
- (5) 26

2. What is the respective ratio of the number of girls enrolled in only Painting classes to the number of boys enrolled in the same?

- (1) 77:26
- (2) 21:73

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(3) 26 : 77			
(4) 73 : 21			
(5) None of these			
3.Number of girls enrolled in only Dansame?	ncing classes i	s what	per cent of the boys enrolled in the
(1) 38.67			
(2) 35.71			
(3) 41.83			
(4) 28.62			
(5) None of these			
4.What is the total number of boys w	ho are enrolle	ed in Do	ancing?
(1) 318			
(2) 364			
(3) 292			
(4) 434			
(5) None of these			
5.What is the total number of student	ts enrolled in	all the	three classes together?
(1) 135			
(2) 164			
(3) 187			
(4) 142			
(5) None of these			
Answers with Explanation!!!!!!!!!			

No. of boys = 910 and No. of girls = 650



1.(5)Required % =
$$\frac{(182+156+65)}{1560} \times 100$$

= $\frac{4030}{156} = 25.83 = 26\%$ (Approx.)

- 2.(3)Required ratio = 130: 385 = 26:77
- 3.(2)Required % = $\frac{65 \times 100}{182}$ = 35.71%
- 4.(4)Required number = (78 + 182 + 70 + 104) = 434
- 5.(1)Required number = (70+65) = 135
- 6.(4) x=-15,13 & y=-15
- 7.(2) x=4,3 & y=2,1
- 8.(4) x=5,3 & y= 2,3
- 9.(5) x=-6,-3 & y= -3,4
- 10. (2) x=9/4,1 & y=-2,-1

Directions (1-5): Read the information given and answer the following questions accordingly.

Not surprisingly the growth of the hotel industry is driven by the increase in the number of people using hotels and the increase in per person use of the hotel. In 2004, it is expected that there will be 200 million hotel users in India or about 20 per cent of the population will generate Rs. 50 billion in hotel revenues. Industry revenues should expand from Rs. 50 billion to Rs. 150 billion by 2008, while the number of users should grow to over 560 million or to about half the population of India in the same period.

Q1. What is the estimated population of India in 2004?

- (a) 98 crore
- (b) 100 crore
- (c) 110 crore
- (d) 115 crore
- (e) None of these

Q2. What will be the simple average growth rate of population of India in the given period 2004-2008?

- (a) 2%
- (b) 3%

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(c) 4%			
(d) 4.5%			
(e) None of these			
Q3. What will be the growth in perce	entage of users	s in Indi	ia by 2008?
(a) 100%			
(b) 150%			
(c) 180%			
(d) 200%			
(e) None of these			
Q4. What will be the percentage groperiod?	wth of the rev	enues d	of the hotel industry in the given
(a) 200%			
(b) 230%			
(c) 260%			
(d) 300%			
(e) None of these			
Q5. It is believed that if 50% of the peconomically developed. Can we say	-	_	
(a) Yes			
(b) No			
(c) Cannot say			
(d) Data inadequate			
(e) None of these			
Directions (6-12): Read the informat	ion given and (answer	the following questions accordingly.

Bihar and Orissa are the most deprived states of India. While they contain one-fifth of India's population, they have almost one-third of India's illiterates. In 1998, only a small fraction of Orissa and Bihar's population was literate versus 85 per cent of Kerala's population. More than two-thirds of the births are not attended by any medical facility, 1/10th of the infants born in Orissa and Bihar die in infancy and an equal number before reaching the age of five. Almost 90 per cent of the under five deaths are due to malnutrition.

From amongst the lucky kids who have survived for the first five years, 1/3rd of them work as child labourers and only half of the remaining are sent to school. Of those who attend classed, only 40 per cent are able to reach Std V. In India, 30 per cent of the children under 16 work as labourers. Orissa and Bihar contain 1/3rd of the child labourers in India. India has the largest population of child labourers, which is 1/15th of its total population.

In Orissa and Bihar, out of 100 children enrolled in school, 32 are girls. And out of 100 who attend Std X, only 10 are girls. Only 38 out of 100 Indian women are literate versus 57 per cent of males. Even in wealthy states such as Punjab, girls suffer from malnutrition seven times more than boys do. The total population of the country was 90 crore in 1998 and the ratio of male to female in India was 10 to 9.

Q6. According to the information provided, what percentage of the infants in Orissa and Bihar attend Std V?

- (a) 11.33
- (b) 10.66
- (c) 13.33
- (d) 12.33
- (e) None of these

Q7. The number of child labourers in India in 1998 are:

- (a) 15 crore
- (b) 16 crore
- (c) 12 crore
- (d) 6 crore
- (e) None of these

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Q8. The Orissa and Bihar, out of 100 k labourers?	born, approximately how many children work as child
(a) 27	
(b) 32	
(c) 13	
(d) 38	
(e) None of these	
Q9. What percentage of girl children	enrolled in school reach Std X in Orissa and Bihar?
(a) 10%	
(b) 32%	
(c) 60%	

Q10. In 1998, the literates in Kerala exceed the literates in Orissa and Bihar by:

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(d) Insufficient data

(e) None of these

(d) Insufficient data

(e) None of these

(a) 16.2 crore

(b) 27 crore

(c) 43.2 crore

Q11. The number of literates in India in 1998 is:

(a) 30%

(b) 35%

(c) 27%

- (d) Insufficient data
- (e) None of these

Q12. The number of illiterates in Orissa and Bihar in 1998 is almost:

- (a) 18 crore
- (b) 13.2 crore
- (c) 15.6 crore
- (d) Insufficient data
- (e) None of these

Directions (13-15): Read the information given and answer the following questions accordingly.

AMS, Inc. is the leader in selling ideas universe wide but its maximum revenue comes from three principal planets only, viz. Earth, Mars, Jupiter, Further, it has three products, viz. CSP, CC and CP. In a particular year, the number of units sold had a distribution as follows: The number of units of CCs sold on Mars was 12 per cent of the number of units of CPs sold on Earth. The number of units of CPs sold on Jupiter was 1000. Total number of CC units sold was 2600. Total number of CP units was 200 higher than that of the total number of units of CCs sold. The number of units of CSP sold on Mars was 10 per cent of the number of units of CP sold on Jupiter. The number of units of CSP sold on Earth was 2000. The number of units of CC sold on Earth was 15 per cent of the number of units CSP sold on Jupiter.

The prices of the units on the different planets were as follows:

Earth \rightarrow Rs. 15 per unit

Mars \rightarrow Rs. 10 per unit

Jupiter \rightarrow Rs. 8 per unit

The number of units of CSP sold on Jupiter was 300.

The number of units of CP sold on Earth was 600.

Q13. The number of units of CC sold on Jupiter is:

(a) 1520

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(b) 2483		
(c) 3423		
(d) 600		
(e) None of these		
Q14. The revenue generated on Eartl	is greater than that generated on Jupiter by about	
(a) Rs. 8000		
(b) Rs. 9000		
(c) Rs. 10,000		
(d) Cannot be determined		
(e) None of these		
Q15. The overall revenue generated i	the highest from	
(a) CSPs		
(b) CP		
(c) CCs		
(d) Can't be determined		
(e) None of these		
Solutions		
S1. Ans.(b)		
Sol. 200 million = 20% of population		
\Rightarrow Population = 200 × 5 = 1000 million	= 100 crore	

S2. Ans.(b)

Sol. 2004 population = 1000 million

Population in 2008 or after 4 years = $560 \times 2 = 1120$ million

: Growth rate = $(120 \times 100)/(1000 \times 4) = (12/4)\% = 3\%$ per annum simple growth rate.

S3. Ans.(c)

Sol. Hotel users in 2004 = 200 million

Hotel users in 2008 = 560 million

:: Growth in percentage =(560 - 200)/200=360/200=180%

S4. Ans.(a)

Sol. Total revenue in 2004 = 50 billion

Total revenue in 2008 = 150 billion

: Growth in percentage =(150 - 50)/50×100=100/50=200%

S5. Ans.(d)

Sol. By 2008 half or 50% of the India population will be using hotels.

We do not have any information about 2007. Hence the data is inadequate.

S6. Ans.(b)

Sol. Born 100 \Rightarrow 10 die at infancy

 $90 \Rightarrow 10$ die till age 5

 $80 \Rightarrow 2/3 \times 1/2 \times 80$ go to school

∴ Who attend Std. V =80×1/3×0.4=10.66%

S7. Ans.(d)

Sol. Number of child labourers in India = $(90 \times 1/15)$ crore = 6 crore

S8. Ans.(a)

Sol. Out of 100 born, 20 die by the age of 5.

Number of child labourers in Orissa and Bihar =1/3×80 ≅27

S9. Ans.(d)

Sol. Since we do not know how many children reach Std X, the answer cannot be found. Hence, option (d).

S10. Ans.(d)

Sol. Since we do not know the exact population of Kerala, Orissa and Bihar, the answer cannot be found

S11. Ans.(c)

Sol. Number of female literates =90×9/19×0.38=16.2 crore

Number of male literates $=90\times10/19\times0.57 = 27$ crore

:: Total literates = 16.2 + 27 = 43.2 crore

S12. Ans.(c)

Sol. Total illiterates in India = 90 - 43.2 = 46.8 crore

: Number of illiterates in Orissa and Bihar =1/3×46.8 = 15.6 crore

(13-15)

Earth						Мо	ars		Jupiter		Total
	Sales	Revenue	Sales	Reven	nue	3	Sales	ı	Revenue	Sales	Revenue
CSP	2000	30,000	100	1000			300		2400	2400	33,400
СС	45	675	72	720		_	2483		19864	2600	21259
СР	600	9000	1200	12,00	0	<u>-</u>	1000	,	8000	2800	29,000
Total		39,675	5	13,72	0				30,264		

The answers can be read out of the table itself.

\$13. Ans.(b)

Sol. 2483

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S14. Ans.(e)			
Sol. None of these			
S15. Ans.(a)			
Sol. CSP			
Directions (Q. 1 – 5): Study the given follow:	informati	ion carefully	to answer the questions that
An organization consists of 3500 emp Marketing, IT, Production and Account organisation is 3: 2.8% of the males account department. The ratio of males eventh of the females work in the IT department. The number of females is remaining females work in the Marke in the IT department is 375. 22% of the work in the Account department. 1. The number of males working in the cent of the total number of males in (a) 6 (b) 8 (c) 10 (d) 11 (e) 12	ets. The rate work in the less to femo departments one-sixthe ting departments we males we he Account	atio of male to the HR depart ales working ent. 46% of the h of the male artment. The work in the M	to female employees in the ment. 22% of the female work in the in the HR department is 3 : 5. One-the males work in the Production es working in the same. The total number of employees working Marketing department and remaining
Answer			
Correct Answer :Answer: a			
2. How many females work in Product (a) 140 (b) 200 (c) 180 (d) 160 (e) None of these	•		

- (a) 28
- (b) 32
- (c) 29
- (d) 31
- (e) 30

Correct Answer : Answer: d

- 4. The ratio of the numbers of females working in IT department to the numbers of males working in the same department is
- (a) 15:8
- (b) 1:2
- (c) 8:15
- (d) 2 : 1
- (e) 7:11

Answer

Correct Answer : Answer: c

- 5. What is the total number of employees working in the Marketing and Production departments together?
- (a) 1900
- (b) 2040
- (c) 2020
- (d) 2031
- (e) 2042

Answer

Correct Answer : Answer: b

- 1. Kartik, Bhuvan and Sid entered into a partnership and invested Rs 13,000, Rs 16,000 and Rs 19,000 respectively. After 7 months, Kartik and Bhuvan added Rs 1,000 and Rs 5,000 respectively while Sid withdrew Rs 5,000. If at the end of year their annual profit is Rs 43,160, find the total profit share of Kartik and Sid.
 - A) Rs 28,030
 - B) Rs 27,190

- C) Rs 26,830
- D) Rs 28,420
- E) Rs 27,040

Option E

Solution:

Karti: Bhuvan: Sid

13<mark>000*7 + 14</mark>000*5 : 16000*<mark>7 + 2100</mark>0*5 : 19000*7 + 14000*5

23:31:29

So required share = (23+29)/(23+31+29) * 43160 = Rs 27,040

- 2. Megha, Isha and Rani entered into a partnership by investing Rs 20,000, Rs X, and Rs 22,000 respectively for 6 months, 8 months and 10 months respectively. If Isha earns a profit of Rs 16500 out of a total profit of Rs 44,550, find the total investment done by all three.
 - A) Rs 47,000
 - B) Rs 25,000
 - C) Rs 54,000
 - D) Rs 39,000
 - E) Rs 67,000

Answer

Option E

Solution:

Megha : Isha : Rani

20000*6: X*8: 22000*10

30000 : 2X : 55000 15000 : X : 27500

So X/(15000+X+27500) * 44550 = 16500 Gives X/(15000+X+27500) * 270 = 100

Solve, X = 25,000

So total investment = 20+25+22 = 67,000

- 3. Kamya, Prisha and Tisha started a business by investing Rs X, Rs (X+400) and Rs (X-200). If after the end of year, total share of profit of Kamya and Tisha is Rs 8100 out of a total profit of Rs 13,500, find the profit share of Prisha.
 - A) Rs 6100
 - B) Rs 5400

- C) Rs 5100
- D) Rs 6600
- E) Rs 5500

Option B

Solution:

Kamya : Prisha : Tisha X : (X+400) : (X-200)

So(X+X-200)/(X+X+400+X-200)*13500=8100

Solve, X = 1600

So ratio of profit share is 1600 : 2000 : 1400 = 8 : 10 : 7

So profit share of Prisha = 10/25 * 13500 = Rs 5400

- 4. Preeti, Anu and Aarti entered into a business. Preeti invested Rs 2500 for some months, Anu invested Rs 3000 for 2 more months than Preeti and Aarti invested Rs 3500 for 3 months less than Anu. If Anu got Rs 8400, out of a total profit of Rs 19,000, then Aarti invested her money for how many months?
 - A) 3 months
 - B) 5 months
 - C) 4 months
 - D) 6 months
 - E) 2 months

Answer

Option C

Solution:

Preeti: Anu: Aarti

25000*x:3000*(x+2):3500*(x-1)

5x:6(x+2):7(x-1)

So (6x+12)/(5x + 6x+12 + 7x-7) * 19000 = 8400

Solve, x = 5

So Aarti invested money for 4 months

Directions (5-7): A, B and C started a business by investing Rs 800, Rs 1600 and Rs 2000 respectively. After a quarter they invested amounts in a ratio 1:4:2. After another quarter, they invested amounts in ratio 3:2:3. In the last quarter the ratio of investments was same as in 2^{nd} quarter. Also in the last quarter, the respective amounts of A, B and C was double than the

respective amounts invested in 2^{nd} quarter. The total investment of C before 4^{th} quarter was Rs 1400 more than that of A during same duration. Also ratio of B's share in profit to total profit at the end of year was 66 : 153.

- 5. Find the total investment of A, B and C.
 - A) Rs 10,200
 - B) Rs 11,300
 - C) Rs 9,800
 - D) Rs 10,080
 - E) Rs 11,090

Answer

Option A

Solution:

Quarters means 3 months each

Ratio of investments in 2^{nd} quarter – 1 : 4 : 2, so let amounts – x, 4x, 2x

Ratio of investments in 3^{rd} quarter – 3 : 2 : 3, so let amounts – 3y, 2y, 3y

In last quarter, respective amount is double then in 2^{nd} quarter, so amounts – 2x, 8x, 4x

In the last quarter the rat<mark>io of invest</mark>ments was same as in 2nd quarter. — this is not required to solve question.

Given:

(2000 + 2x + 3y) = 1400 + (800+x+3y)

Solve, x = Rs 200

Now ratio of profit share —A: B: C is

800*3 + x*3 + 3y*3 + 2x*3 : 1600*3 + 4x*3 + 2y*3 + 8x*3 : 2000*3 + 2x*3 + 3y*3 + 4x*3

3 gets cancelled, gives

(800+3x+3y): (1600+12x+2y): (2000+6x+3y)

Put x = 200 gives

1400+3y: 4000+2y: 3200+3y

Now given

(4000+2y)/(1400+3y+4000+2y+3200+3y) = 66/153

(2000+y)/(4300+4y) = 22/51

Solve, y = Rs 200

So now the total investment is -(800+3x+3y) + (1600+12x+2y) + (2000+6x+3y) = (4400 + 6x+3y) + (2000+6x+3y) = (4400 + 6x+3y) = (4400 + 6x+3y) + (2000+6x+3y) = (4400 + 6x+3y) =

21x + 8v

put x = 200, y = 200, total investment = Rs 10,200

- 6. If they respectively had invested same amounts in each quarter after quarter 1 which is equal to their respective investments in quarter 1, then what would be the profit of A at the end of year out of a total profit of Rs 19,350?
 - A) Rs 2510
 - B) Rs 3320
 - C) Rs 2560
 - D) Rs 3150
 - E) None of these

Option D

Solution:

800, 1600, 2000 as it is for 3 months, and then for next 9 months x, 4x and 2x

So ratio of profit share – A : B : C is

800*3 + 200*9 : 1600*3 + 800*9 : 2000*3 + 400*9

7:20:16

So profit share of A = 7/43 * 19350 = Rs 3150

- 7. If the respective investments in third quarter was changed and this was in ratio 2 : 4 : 1 (other investments being the same), then what would be the total investment of all three in third quarter, if the average investment of all A B and C was Rs 3100 for whole year?
 - A) Rs 700
 - B) Rs 800
 - C) Rs 500
 - D) Rs 900
 - E) None of these

Answer

Option A

Solution:

New investments – 3z, 2z, and 2z

Investment of A = (800+3x+2z), B = (1600+12x+4z) and C = (2000+6x+1z)

Put x = 200

A = 1400+2z, B = 4000+4z, C = 3200+1z

Now given (1400+2z + 4000+4z + 3200+1z)/3 = 3100

Solve, z = Rs 100

So total investment for quarter 3 = 2z+4z+z = 7z = Rs 700

Directions (8-10): A, B and C started a business. They invested amounts in the ratio 1:3:2 respectively for 8 months. After this they invested amounts in ratio 2:3:4 respectively for 4 months. The average investment of A and B is Rs 2800 while average investment of B and C is Rs 3800.

- 8. Find the total investment of C?
 - A) Rs 4000
 - B) Rs 5000
 - C) Rs 6000
 - D) Rs 4500
 - E) Rs 3500

Answer

Option A

Solution:

A : B : C is

x*8 + 2y*4 : 3x*8 + 3y*4 : 2x*8 + 4y*4 gives (2x+2y) : (6x+3y) : (4x+4y)

Given::

(x+2y+3x+3y)/2 = 2800

4x+5y = 5600

Also (3x+3y+2x+4y)/2 = 3800

5x+7y = 7600

Solve both equations, x = 400, y = 800

So total investment of C = (2x+4y) = Rs 4000

- 9. If B's investment for both the terms (4 months and 8 months) was swapped, then find the total profit share of B and C if annual profit is Rs 46,200.
 - A) Rs 45,600
 - B) Rs 32,800
 - C) Rs 43,600
 - D) Rs 37,800
 - E) None of these

Answer

Option D

Solution:

B's investment for 8 months = 3x = 3*400 = Rs 1200 and for 4 months = 3y = 3*800 = Rs2400

Now swapped, means for 8 months = Rs 2400 and for 4 months is Rs 1200

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So now ratio of A: B: C is

400*8 + 1600*4: 2400*8 + 1200*4: 800*8 + 3200*4

2:5:4

So required profit = (5+4)/(2+5+4) * 46200 = Rs 37,800
```

10. If A's share in annual profit is Rs 9030, find the total profit after a year.

```
A) Rs 41,390
```

B) Rs 45,150

C) Rs 42,610

D) Rs 46,240

E) Rs 43,170

Answer

Option B

Solution:

Ratio of profit share is

(2x+2y): (6x+3y): (4x+4y)

x = 400, y = 800

So ratio becomes

1:2:2

So 1/5 * x = 9030

Total profit = $x = Rs \ 45,150$

Directions:(1-5) Study the following table and answer the questions based on it.

The total population of village satana is 3550, out of which 36% people are below poverty line. The total population of Satana is 11 ½% less than the total population of amin, while there are 29% people in amin who lives below poverty line.

In Nilokheri the people living below poverty line are 40 more than that in amin which is 40% of the total population of this village. The average population of Gharaunda and Samalkha is equal to the average population of amin and Nilokheri, while the difference between their population is 1800 (Village Samalkha is more populated). 47% of the population of Gharaunda are below poverty line. Overall 46% of the population of all villages' together lives below poverty line

1What percent of population of Samalkha lives above poverty line? (Approximate)

A. 26%

B. 27%

C. 28%

D. 29%

E. 30%

Answer

B. 27%

Required percentage =
$$\frac{1187}{4400} \times 100 \approx 27\%$$

	Satana	Amin	Nilokheri	Gharaunda	Samalkha
Total	3550	4000	3000	2600	4400
Population					
BPL	1278	1160	1200	1222	3213

2. Find the approximate average no. of people below poverty line in the given villages.

A. 1610

B. 1620

C. 1615

D. 1320

E. 1730

Answer

C. 1615

Required average =
$$\frac{8073}{5} \approx 1615$$

	Satana	Amin	Nilokheri	Gharaunda	Samalkha
Total	3550	4000	3000	2600	4400
Population					
BPL	1278	1160	1200	1222	3213

3.If 35% of the BPL population of Nilokheri are children, while 30% of the overall population of this village are children. Then what percent of population above poverty line are children?

- A. 25%
- B. 30%
- C. 26 1/3 %
- D. 26 2/3 %
- E. None of these

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Answer

D. 26 2/3 %

Required percentage =
$$\frac{480}{1800} \times 100 = 26\frac{2}{3}\%$$

	Satana	Amin	Nilokheri	Gharaunda	Samalkha
Total	3550	4000	3000	2600	4400
Population					
BPL	1278	1160	1200	1222	3213

4. What is the difference between total population of Nilokheri and that of Gharaunda?

- A. 300
- B. 200
- C. 250
- D. 400
- E. None of these

Answer

D. 400

Required difference =3000-2600=400

	Satana	Amin	Nilokheri	Gharaunda	Samalkha
Total	3550	4000	3000	2600	4400
Population					
BPL	1278	1160	1200	1222	3213

5.If in the next year the total population of amin would increase by 20%, while BPL population would decrease by 25%, then what percent of population in next year would be below poverty line?

- A. 18.125%
- B. 18.325%
- C. 18.225%
- D. 18.525%
- E. None of these

Answer

A. 18.125%

$$\frac{0.75 \times 1160}{1.2 \times 4000} \times 100 = 18.125\%$$

	Satana	Amin	Nilokheri	Gharaunda	Samalkha
Total	3550	4000	3000	2600	4400
Population					
BPL	1278	1160	1200	1222	3213

Directions:(6-10) Study the following data carefully to answer the questions that follow: Gauray, a sweet seller, bought some quantity of three types of sweets Rasgulla, Rasmalai and Kalakand in ratio of 6:10:9. Kalakand costed him a total of Rs. 18,900 at rate of 420 per kg. By selling Kalakand at a discount of 5% he earned a profit of 13 2/21% On Rasmalai (which was marked Rs. 500 per kg) he earned Rs. 5 less profit per kg as compared to that on Kalakand by selling Rasmalai at 10% discount. Gauray spent a total of Rs. 46,400 on buying these sweets, while he earned a total profit of Rs. 5875 on selling all bought sweets. Rasgullas were marked 40% above cost price per kg.

6.What is the difference betwee<mark>n the numb</mark>er of Accord cars sold by dealers D and E together and the number of City cars sold by dealers B and F together?

A. Rs. 365.8

B. Rs. 371.2

C. 420.5

D. 325.2

E. None of these

Answer

B. Rs. 371.2

Required average C.P. per kg $= \frac{46400}{125} = \text{Rs.} 371.2$

Total quantity of Kalakand =
$$\frac{18900}{420}$$
 = 45 kg

∴ Total quantity of Rasgula =
$$45 \times \frac{6}{9} = 30 \text{ kg}$$

Total quantity of Rasmalai =
$$45 \times \frac{10}{9} = 50 \text{ k}$$

Now, S.P. of Kalakand

Now, S.P. of Kalakand
$$= \frac{100 + \frac{275}{21}}{100} \times 420 = \text{Rs.} 475/\text{kg}$$

$$\therefore \text{ M. P. of Kalakand} = 475 \times \frac{100}{95}$$

S. P. of Rasmalia =
$$\frac{90}{100} \times 500$$

= Rs. 450/kg
C. P. of Rasgulla
= $\frac{[46400 - (50 \times 400) - (45 \times 420)]}{30}$
= Rs. 250/kg
Profit per kg of Rasgulla
= $\frac{5875 - (50 \times 50) - (45 \times 55)}{30}$
= Rs. 30

∴ S.P. pe	er kg of Rasgulla = 250 + 30 = Rs. 280
And M.I	P. per kg of Rasgulla

$$= \frac{140}{100} \times 250 = \text{Rs.} 350$$

Sweets	Quantity (Kg)	C.P. (in Rs/kg)	M.P. (Rs./kg)	S.P. (Rs./kg)	Profit (Rs./kg)
Rasgulla	30	250	350	280	30
Rasmalai	50	400	500	450	50
Kalakand	45	420	500	475	55

7.If Gaurav gave an extra discount of 20% on Kalakand, then his gain% or loss% was:

A.
$$9\frac{11}{21}\%$$
 profit

C.
$$10\frac{11}{23}\%$$
 loss

$$D. 9^{\frac{11}{21}} \% loss$$

Answer

$$D. 9^{\frac{11}{21}}\% loss$$

New S.P. =
$$\frac{80}{100}$$
 × 475 = Rs. 380/kg
 \therefore Loss% = $\frac{40}{420}$ × 100 = 9 $\frac{11}{21}$ %

Total quantity of Kalakand =
$$\frac{18900}{420}$$
 = 45 kg

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$$45 \times \frac{6}{9} = 30 \text{ kg}$$

Total quantity of Rasmalai =
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Sweets	Quantity (Kg)	C.P. (in Rs/kg)	M.P. (Rs./kg)	S.P. (Rs./kg)	Profit (Rs./kg)
Rasgulla	30	250	350	280	30
Rasmalai	50	400	500	450	50
Kalakand	45	420	500	475	55

8. Find the total quantity of sweets bought by Gaurav?

- A. 135 kg
- B. 126 kg
- C. 125 kg
- D. 120 kg
- E. 130 kg

Answer

C. 125 kg

Total sweets bought = 30 + 50 + 45 = 125 kg

Total quantity of Kalakand =
$$\frac{18900}{420}$$
 = 45 kg

∴ Total quantity of Rasgula =
$$45 \times \frac{6}{9} = 30 \text{ kg}$$

Total quantity of Rasmalai =
$$45 \times \frac{10}{9} = 50 \text{ kg}$$

Now, S.P. of Kalakand

$$= \frac{100 + \frac{275}{21}}{100} \times 420 = \text{Rs. } 475/\text{kg}$$

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. 90
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C. P. of Rasgulla [46400 - (50×400) - (45×420)]
30
= Rs. 250/kg
Profit per kg of Rasgulla 5875 - (50×50) - (45×55)
30
= Rs. 30
: S.P. per kg of Rasgulla = 250 + 30 = Rs. 280
And M.P. per kg of Rasgulla
140
$=\frac{100}{100} \times 250 = \text{Rs.} 350$

Sweets	Quantity (Kg)	C.P. (in Rs/kg)	M.P. (Rs./kg)	S.P. (Rs./kg)	Profit (Rs./kg)
Rasgulla	30	250	350	280	30
Rasmalai	50	400	500	450	50
Kalakand	45	420	500	475	55

9. If 10kg of Rasmalai was wast<mark>ed away d</mark>ue to some reason. Find profit% or loss% by selling the remaining Rasmalai as per given condition.

- A. 10% loss
- B. 10% gain
- C. 12% loss
- D. 15% loss
- E. None of these

Answer

A. 10% loss

Total. C.P. =
$$50 \times 400 = Rs. 20,000$$

Total S P = $40 \times 450 = Rs. 18000$

:. Required loss% =
$$\frac{2000}{20000} \times 100 = 10\%$$

Total quantity of Kalakand =
$$\frac{18900}{420}$$
 = 45 kg

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100	

Sweets	Quantity (Kg)	C.P. (in Rs/kg)	M.P. (Rs./kg)	S.P. (Rs./kg)	Profit (Rs./kg)
Rasgulla	30	250	350	280	30
Rasmalai	50	400	500	450	50
Kalakand	45	420	500	475	55

10.Cost price per kg of Kalakand was what percent less than marked price per kg of Kalakand

- A. 18%
- B. 16%
- C. 15%
- D. 12%
- E. 20%

Answer

B. 16%

Let the quantity of Rasgulla, Rasmalai and Kalakand be 6x,
$$10x$$
 and $9x$ respectively.

Total quantity of Kalakand = $\frac{18900}{420}$ = 45 kg

 \therefore Total quantity of Rasgula = $45 \times \frac{6}{9}$ = 30 kg

Total quantity of Rasmalai = $45 \times \frac{10}{9}$ = 50 kg

Now, S.P. of Kalakand

= $\frac{100 + \frac{275}{21}}{100} \times 420$ = Rs. 475 /kg

 \therefore M. P. of Kalakand = $475 \times \frac{100}{95}$ = Rs. 500 /kg

S. P. of Rasmalia =
$$\frac{90}{100} \times 500$$

= Rs. 450/kg
C. P. of Rasgulla
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Rasgulla	30	250	350	280	30	
Rasmalai	50	400	500	450	50	
Kalakand	45	420	500	475	55	

Directions (Q. 1 – 5): Study the given information carefully to answer the questions that follow:

An organization consists of 3500 employees working in different departments, viz HR, Marketing, IT, Production and Accounts. The ratio of male to female employees in the organisation is 3: 2.8% of the males work in the HR department. 22% of the female work in the account department. The ratio of males to females working in the HR department is 3: 5. One-seventh of the females work in the IT department. 46% of the males work in the Production department. The number of females is one-sixth of the males working in the same. The remaining females work in the Marketing department. The total number of employees working in the IT department is 375. 22% of the males work in the Marketing department and remaining work in the Account department.

1. The number of males working in the Account department forms approximately what per cent of the total number of males in the organisation?

- (a) 6
- (b) 8
- (c) 10
- (d) 11
- (e) 12

Correct Answer:

Answer: a

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2. How many females work in Production depart	ment?			
(a) 140				
(b) 200				
(c) 180				
(d) 160				
(e) None of these				
Correct Answer :				
Answer: e				
3. The total number of employees working in the	Account department forms approximately			
what per cent of the total number of female em				
(a) 28				
(b) 32				
(c) 29				
(d) 31				
(e) 30				
Correct Answer :				
Answer: d				
4. The ratio of the numbers of females working i	n IT department to the numbers of males			
working in the same department is	·			
(a) 15 : 8				
(b) 1 : 2				
(c) 8 : 15				
(d) 2 : 1				
(e) 7:11				
Correct Answer :				
Answer: c				
5. What is the total number of employees worki	ng in the Marketing and Production			
departments together?				
(a) 1900				
(b) 2040				
(c) 2020				
(d) 2031				
(e) 2042				
Correct Answer:				
Answer: b				

Directions (Q. 1-5): Study the following information carefully to answer the questions given below:

In the recently held Commonwealth Games, a total number of 500 players participated in five different games, viz Athletics, Hockey, Lawn Tennis, Rugby and Badminton. 15% of the total players participated in Badminton. $^2/_5$ of the total players participated in Hockey. 6% of the total players participated in Lawn Tennis, and 25% of the total players participated in Athletics. The remaining players participated in Rugby. One-fourth of the Hockey players are females. 20% of the Badminton players are males. Half of the players who participated in Lawn Tennis are males. There are 55 female athletes. No female player participated in Rugby.

1. The	number	of female	players w	rho par	ticipate	d in Bo	dminton	is approxi	mately v	vhat per
cent of	f the total	l number o	f players	who pa	rticipate	ed in Ru	ıgby?			

- 1) 82%
- 2) 86%
- 3) 80%
- 4) 76%
- 5) None of these

2. What is the difference between the number of male players who participated in Hockey and the number of female players who participated in Lawn Tennis?

- 1) 125
- 2) 145
- 3) 130
- 4) 135
- 5) 150

3. If due to certain reason Athletics was dropped and all the athletes left the tournament, then what was the percentage of male players among the total players remaining in the tournament?

- 1) 45.66%
- 2) 40.33%

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3) 35.33%						
4) 30.66%						
5) 66.66%						
4. What is the ratio of the total nutrical number of female players part		_	rs participating in Badminton to the			
1) 10 : 3						
2) 3 : 10						
3) 5 : 10						
4) 3 : 25						
5) None of these						
5. If there is an increase of 10% in the total number of female players participating in Hockey and Badminton, then what is the total number of female players who participated in the tournament?						
1) 225						
2) 215						
3) 218						
4) 199						
5) 191						
Directions (Q. 6-10): Study the follow	ving informati	on and	answer the questions that follow.			

The premises of an institute are to be renovated. Only the floor is to be renovated either with marble or with wood. All rooms, halls and pantry are rectangular. The area to be renovated comprises a hall measuring 33m by 39m. The director's room measures 13m by 12m and the pantry measures 14m by 12m. A record keeping-cum-server room measures 23m by 13m and the accounts room measures 12m by 23m. The total area of the institute is 2500 square metres. The cost of wooden flooring is Rs. 170 per square metre and the cost of marble flooring is Rs. 190 per square metre. The accounts room, the record keeping-cum-server room, and the pantry are to be floored with marble. The director's room and the hall are to be floored with wood.

- 6. What is the ratio of the total cost of wooden flooring to the total cost of marble flooring?
- 1) 1443 : 735
- 2) 8177 : 4655
- 3) 1443 : 4655
- 4) 24531 : 14117
- 5) 9177 : 4655
- 7. If four walls and ceiling of the room (the height of the room is 15 metres) are to be painted at the cost of Rs. 190 per square metre, how much will be the total cost of renovation of the director's room, including the cost of flooring?
- 1) Rs. 198660
- 2) Rs. 178680
- 3) Rs. 198880
- 4) Rs. 22876
- 5) Rs. 188680
- 8. If the remaining area of the institute is to be carpeted at the rate of Rs. 210 per square metre, by how much will the cost of renovation of institute premises increase?
- 1) Rs. 75000
- 2) Rs. 72840
- 3) Rs. 65940
- 4) Rs. 75940
- 5) Rs. 64940
- 9. What is the percentage area of the institute that is not to be renovated?
- 1) 16.44%
- 2) 13.56%

3) 14.55%			
4) 12.56%			
5) 11.44%			
10. What is the total cost of renovati	ion of the hall	and the	e accounts room?
1) Rs. 287700			
2) Rs. 277230			
3) Rs. 266600			
4) Rs. 298870			
5) Rs. 271230			
Answers:			
1 2			
1. 2 2. 4			
3. 5			
4. 2			
5. 5			
6. 4			
7. 1			
8. 3 9. 4			
10. 5			
Directions (Q. 1-5): Study the following below:	ng informatio	n carefu	ully to answer the questions given

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1. The number of female players who participated in Badminton is approximately what per cent of the total number of players who participated in Rugby?

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- 4) 3 : 25
- 5) None of these
- 5. If there is an increase of 10% in the total number of female players participating in Hockey and Badminton, then what is the total number of female players who participated in the tournament?
- 1) 225
- 2) 215
- 3) 218
- 4) 199
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