Directions (1-5): Go through the charts below and answer the questions based on it. The bar-charts shown here represent the earning of a sales executive Mohit. Bar chart (1) gives us the details of his earnings in the four quarters of the year across the five regions - West, North, South, East and Central. Bar chart (2) gives the details of his total earning in the four quarters in three different years. Bar chart (1) is applicable for bar chart (2) and vice-versa.



Q1. Across the given years, which quarter has given the maximum earning to Mohit?
(a) Qtr 1
(b) Qtr 2
(c) Qtr 3
(d) Qtr 4
(e) Cannot be determined

Q2. Which region has brought maximum earning for Mohit in the year 2000 ?
(a) South
(b) West
(c) East
(d) Central
(e) North

Q3. What is the difference between Mohit's earning due to the Central zone during 2001 and earning due to the East zone during 2001?
(a) 4000
(b) 1000
(c) 2000
(d) 3000
(e) 5000

Q4. What is the maximum difference between any two regional earnings in any quarter?
(a) Rs. 15500
(b) Rs. 13000
(c) Rs. 14500
(d) Rs. 17500
(e) None of the above

Q5. Find the percentage change in Mohit's earning due to the south zone during 2001 over the previous year.
(a) $14 \%$
(b) $20 \%$
(c) $25 \%$
(d) $33 \%$
(e) None of the above

Q6. Number of passages she has done on the last day :
(a) 30
(b) 41
(c) 31
(d) 22
(e) None of these

Q7. Total number of passages that she has completed in those 10 days:
(a) 84
(b) 180
(c) 175
(d) can't be determined
(e) None of these

Q8. At the centre of a city's municipal park there is a large circular pool. A fish is released in the water at the edge of the pool. The fish swims North for 300 feet before it hits the edge of the pool. It then turns East and swims for 400 feet before hitting the edge again. What is the area of the pool?
(a) $62500 \pi$
(b) $125000 \pi$
(c) $250000 \pi$
(d) $500000 \pi$
(e) Cannot be determined

Q9. Rohan pick up Sohan from college at $3: 30 \mathrm{pm}$. One day Sohan left the college at $2: 30 \mathrm{pm}$, and start walking to home at 6 $\mathrm{km} / \mathrm{hr}$. He meets Rohan in the way who start at his normal time and reach home 24 minutes earlier than usual. Find Rohan's speed.
(a) $24 \mathrm{~km} / \mathrm{h}$
(b) $66 \mathrm{~km} / \mathrm{h}$
(c) $6 \mathrm{~km} / \mathrm{h}$
(d) $36 \mathrm{~km} / \mathrm{h}$
(e) None of these

Q10. 70\% of the students who joined XLRI last year play football, $75 \%$ play cricket, $80 \%$ play basketball and $85 \%$ play carom. The minimum percentage of students who play all four games is
(a) $5 \%$
(b) $10 \%$
(c) $15 \%$
(d) $20 \%$
(e) None of these

## Surprise Quant sectional Test 4

11. In an examination a student attempted all 60 questions. He gets 2 marks for every right answer and minus 1 marks for each wrong answer. Find how many wrong questions were he attempted if got total 72 marks?
1) 48
2) 58
3) 16
4) 20
5) None of these
12. Average monthly salary of 8 technicians of a workshop was Rs. 1200 and average monthly salary of non-technician was Rs. 300. Find total number of employee of this workshop if average monthly salary of all the employee was Rs. 500 ?
1) 16
2) 36
3) 56
4) 40
5) None of these
13. A shopkeeper buys some quantity of lemon at the rate 3 in Rs. 2 and buys same quantity of lemon at the rate 2 in Rs. 3. He sold all of them at the rate 5 in Rs. 5 . If during the transaction the shopkeeper losses Rs. 30. Find the quantity of the first types of lemon that he mixed ?
1) 360
2) 280
3) 180
4) 240
5) None of these
14. A shopkeeper gives two successive discount of $50 \%$ and $\mathbf{4 0 \%}$ respectively. If second discount is Rs. 180 . Find selling price of this article ?
1) 900
2) 270
3) 370
4) 570
5) None of these
15. A man travels $\mathbf{2 5 \%}$ part of the Journey at the speed of $\mathbf{5 0}$ $\mathrm{km} / \mathrm{hr}$, next $60 \%$ part of the journey at the speed of 40 $\mathrm{km} / \mathrm{hr}$. and rest part of the journey at the speed of $20 \mathrm{~km} / \mathrm{hr}$. Find average speed of the men during whole journey?
1) $344 / 11 \mathrm{~km} / \mathrm{hr}$
2) $374 / 11 \mathrm{~km} / \mathrm{hr}$
3) $364 / 11 \mathrm{~km} / \mathrm{hr}$
4) $80 \mathrm{~km} / \mathrm{hr}$
5) None of these

Solutions:

S1. Ans.(c)
Sol. Use the second bar chart. It is a visual inspection solution.

S2. Ans.(d)
Sol.

| Region | Annual earnings for the region (in thousands) |
| :--- | :--- |
| West | $0.4 \times 10+0.3 \times 5+0.3 \times 15=\mathbf{1 0}$ |
| North | $0.1 \times 10+0.4 \times 5+0.1 \times 25+0.2 \times 15=\mathbf{8 . 5}$ |
| South | $0.2 \times 10+0.2 \times 5+0.3 \times 25=\mathbf{1 0 . 5}$ |
| East | $0.1 \times 5+0.2 \times 25+0.3 \times 15=\mathbf{1 0}$ |
| Central | $0.3 \times 10+0.4 \times 25+0.2 \times 15=\mathbf{1 6}$ |

## S3. Ans.(d)

Sol. Mohit's earning due to the Central zone during $2001=20000 * 0.3$ $=6000$
Mohit's earning due to the East zone during $2000=10000 * 0.3=3000$ Required Difference $=6000-3000=3000$

S4. Ans.(d)
Sol. Maximum quarterly zonal earnings are for central Region during quarter III, 2002 = Rs. 18000
Minimum quarterly zonal earnings are East Region during quarter II, 2000 = Rs. 500
Hence, Maximum difference $=18000-500=$ Rs. 17500
S5. Ans.(a)
Sol.

| Region | Annual earnings for the region |
| :--- | :--- |
| West | $0.4 \times$ Q1 $+0.3 \times$ Q11 $+0.3 \times$ QIV |
| North | $0.1 \times$ Q1 $+0.4 \times$ Q11 $+0.1 \times$ Q111 $+0.2 \times$ QIV |
| South | $0.2 \times$ Q1 $+0.2 \times$ Q11 $+0.3 \times$ Q111 |
| East | $0.1 \times$ Q11 $+0.2 \times$ Q111 $+0.3 \times$ QIV |
| Central | $0.3 \times$ Q1 $+0.4 \times$ QIII $+0.2 \times$ QIV |

Earning in South Region in 2001
$=20000 \times 0.2+10000 \times 0.2+20000 \times 0.3=$ Rs. 12000
Earning in South Region in 2000
$=10000 \times 0.2+5000 \times 0.2+25000 \times 0.3=$ Rs. 10500
Therefore, percentage change $=1500 / 10500$

```
Let she did x number of pages on the first day, It means second, third. fourth, .on nineth and tenth day she did
Let she did x number of pages on the first day. It means s
    Now since (x+24) =4(x+3)
        # 3x = 12
    Therefore the number of passages she did on the last day =x+27 =31
7. (c)
    Total number of passages }=x+(x+3)+(x+5)\ldots+(x+27
        =(4\times10)+(3+6+9+\ldots.+27)
        =40+3(1+2+3+\ldots+9)
            =40+135=175
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8. (a) Have a look Not the following diagram to get a better ptcture of what you need to underytand.


From this diagram. it is easy to understand that $\angle 8$ is a right angle.
From this dlagram. It ls easy to understand that $\angle 8$ is a right angle.
Now. since $\triangle A B C$ is a right angle triangle, so $A C$ must pass through the centre of the circle and thus $A C$ is the
Now. since $\triangle A B C$ is a rig
dameter of the circle.
Now, tin $\triangle A B C, A C^{2}=A B^{2}+B C^{2} \Rightarrow A C=500$
It means radius of the circle $=\frac{500}{2}-250 \mathrm{ft}$.
Therefore, area of the circle $=\pi(250)^{2}=62500 \pi \mathrm{sq}$ ff
Hence, cholice (a) is the correct one.


Let P is a point where the Rohan and Sohan meets. They reached home 24 min earlier because Sohan lef the college 1 hour earlier and meet Rohan on the way at $P$. They saved 24 min because they did not travel the distance $\overrightarrow{P \mathrm{P}}$ and --

Time take by Rokan in travelling this distance $=\frac{24}{z}=12 \mathrm{~min}$
It means Rohan meets Sohan at P on $3: 18 \mathrm{pm}$.
Now, distance of $\mathrm{PB}=6 \times \frac{40}{65}=\frac{49}{10} \mathrm{~km}$
This distance covers by Roahn in 12 min .
his speed $=\frac{42}{10 \times 12} \times 60=24 \mathrm{~km} / \mathrm{hr}$
10. (b) The minimum percentage of students who play all four games $=100-\{(100-70)+(100-75)+(100-80)+(100-85)\}$ $=100-(90)=10$
Hence, choice (b) is the correct one.
11). 3

Let he attempted ' $x$ ' correct and ' $y$ ' wrong question
$2 x-y=72-------(I)$ and $x+y=60$ $\qquad$

Solving (I) and (II) $\mathrm{x}=44, \mathrm{y}=16$
12). 2

Let number of non technician $=\mathrm{x}$
$1200 \times 8+300 \times x=(8+x) \times 500$
$9600+300 x=500 x+4000$
$x=28$

Total employee $=8+28=36$
13). 3

Let no. of Ist type lemon $=$ No. of IInd type lemon $=x$
$C P=2 x / 3+3 x / 2=13 x / 6$
$\mathrm{SP}=2 \mathrm{x} * 5 / 5=2 \mathrm{x}$
$13 x / 6-2 x=30$
$13 x-12 x=180$
$\mathrm{x}=180$
14). 2

Let cost of article after Ist discount is $x$
$x * 40 / 100=180$
$x=450$
SP after Ind discount $=450-180=270$
15). 3

Let total distance is 100 KM
$\mathrm{T} 1=25 / 50=1 / 2$ hour
$\mathrm{T} 2=60 / 40=3 / 2$ hour
$\mathrm{T} 3=15 / 20=3 / 4$ hour
$\mathrm{T}=1 / 2+3 / 2+3 / 4=11 / 4$ hour
Avg speed $=100 /(11 / 4)=364 / 11 \mathrm{~km} / \mathrm{hr}$

