## Quant DI Test

Directions (1-5): Study the table and answer the given questions.
Data related to salary structure of five individuals from different organisations in March

| Individuals | Basic <br> Salary | Total <br> Allowance | Total <br> Deduction | Net Salary |
| :---: | :---: | :---: | :---: | :---: |
| P | Rs. 21800 | Rs. 28600 | - | - |
| Q | - | - | Rs. 4350 | Rs. 25850 |
| R | Rs. 10400 | Rs. 12400 | Rs. 2800 | Rs. 20000 |
| S | Rs. 11200 | Rs. 13800 | - | - |
| T | - | Rs. 21600 | Rs. 5700 | - |

(i) Total deduction = Provident Fund Deduction (which is $10 \%$ of basic salary) + Other deductions
(ii) Net salary = Basic salary + Total allowance - Total deduction
(iii) Few values are missing in the table (indicated by). A candidate is expected to calculate the missing value, if it is required to answer the given question, on the basis of the given data and information.

Q1. If other deductions of $P$ was Rs. 4720 , then what was his net salary?
(a) Rs. 42500
(b) Rs. 43500
(c) Rs. 43000
(d) Rs. 41500
(e) Rs. 42000

Q2. If Q's total allowance was Rs. 3000 more than his basic salary, what was his total allowance?
(a) Rs. 17000
(b) Rs. 17500
(c) Rs. 16000
(d) Rs. 16600
(e) Rs. 15500

Q3. If the respective ratio of Provident Fund deduction and other deductions of $S$ was $7: 13$, then what was S's other deduction?
(a) Rs. 2160
(b) Rs. 2080
(c) Rs. 2120
(d) Rs. 2040
(e) Rs. 1980

Q4. Basic salary of $S$ is what per cent more than the basic salary of $R$ ?
(a) $6 \frac{4}{13} \%$
(b) $5 \frac{7}{13} \%$
(c) $9 \frac{9}{13} \%$
(d) $11 \frac{7}{13} \%$
(e) $7 \frac{9}{13} \%$

Q5. If other deductions of T was Rs. 4000, what was his net salary?
(a) Rs. 32500

## Quant DI Test

(b) Rs. 32900
(c) Rs. 32700
(d) Rs. 31700
(e) Rs. 32300

## Set-2

2,000 students secured admissions into the 2-year MBA programme beginning in 1997. Figure A given below provides the educational background of this batch of students. The same batch of students graduated in 1999 and had opted for different specializations as indicated in figure B given below. All the students who secured admission in 1997 passed out in 1999.


Figure A: When they entered in 1997
Figure B: When they left in 1999
Note: $20 \%$ of Engineers and $10 \%$ of (Science + Commerce) students were with some work experience before joining MBA programme. All others students were without work experience.

Q6. $40 \%$ of students with work experience specialized in Marketing. How many students with specialization in Marketing are without work experience?
(a) 352
(b) 396
(c) 440
(d) 88
(e) None of these

Q7. If $50 \%$ of engineers specialized in Systems, how many non-engineers specialized in Systems?
(a) 360
(b) 0
(c) 100
(d) 160
(e) None of these

Q8. What is the difference between the number of students specializing in Finance in 1999 and the number students who had CA or Commerce background?
(a) 500
(b) 480

## Quant DI Test

(c) 20
(d) 40
(e) None of these

Q9. $24 \%$ of students of graduating class in 1998 specialized in finance. Find the \% increase in the number of students specializing in finance from 1998 to 1999.
(a) $1 \%$
(b) $100 / 24 \%$
(c) $3 \%$
(d) Cannot be determined
(e) None of these

Q10. 30\% of Engineers and 40\% of Commerce students specialized in Finance. The remaining students who specialized in finance were Science graduates. What percentage of Science graduates opted for finance?
(a) $24.66 \%$
(b) $34.44 \%$
(c) $38.68 \%$
(d) Cannot be determined
(e) None of these

Q11. The ratio between the speed of a bus and train is $15: 27$, respectively. Also, a car covered a distance of 720 km in 9 h . The speed of the bus is three-fourth of the speed of the car. How much distance will the train cover in 7 $h$ ?
(a) 760 km
(b) 756 km
(c) 740 km
(d) Cannot be determined
(e) None of these

Q12. Two stations, $A$ and $B$ are 827 km apart from each other. One train starts from station $A$ at 5 am and travel towards station $B$ at $62 \mathrm{~km} / \mathrm{h}$. Another train starts from station $B$ at 7 am and travel towards station $A$ at $59 \mathrm{~km} / \mathrm{h}$. At what time will they meet?
(a) $1: 00 \mathrm{pm}$
(b) $11: 45 \mathrm{am}$
(c) $12: 48: 35 \mathrm{pm}$
(d) 11:30:30 am
(e) 1:37:45 pm

Q13. 789, 645, 545, 481, 440, 429, 425
(a) 645
(b) 545
(c) 481
(d) 440
(e) 429

Q14. 32, 36, 41, 61, 86, 122, 171, 235
(a) 41
(b) 61
(c) 86
(d) 122
(e) 171

Q15. 3, 4, 9, 22.5, 67.5, 202.5, 810
(a) 4
(b) 9
(c) 22.5
(d) 67.5
(e) 202.5

## Solutions:

S1. Ans.(b)
Sol. We know that,
Net salary = Basic salary + Total allowance - Total deduction
Total deduction = PF deduction (10\% of basic salary)

+ Other deduction
$=10 \%$ of $21800+4720=2180+4720=6900$
Net salary $=21800+28600-6900=$ Rs. 43500

S2. Ans.(d)
Sol. Let the basic salary of $Q$ be Rs. $x$
$\therefore$ Total allowance of Q is Rs. $(\mathrm{x}+3000)$
Net salary $=$ Basic salary + Total allowance - Total deduction
$\Rightarrow 25850=x+x+3000-4350$
$\Rightarrow 25850=2 \mathrm{x}-1350 \Rightarrow 2 \mathrm{x}=25850+1350$
$\Rightarrow 2 \mathrm{x}=27200$
$\Rightarrow x=$ Rs. 13600
$\therefore$ Total allowance of Q is $13600+3000=$ Rs. 16600 .

S3. Ans.(b)
Sol. Let the PF deduction and other deduction of $S$ be $7 x$ and $13 x$
It is given that, $10 \%$ of $11200=$ PF deduction
$\Rightarrow 10 / 100 \times 11200=$ PF deduction
$\Rightarrow$ PF deduction $=$ Rs. 1120
$\therefore$ Other deduction of $S=13 x / 7 x \times 1120=$ Rs. 2080

## S4. Ans.(e)

Sol. $\therefore$ Required percentage
$=\frac{11200-10400}{10400} \times 100$
$=\frac{800}{10400} \times 100$
$=7 \frac{9}{13} \%$

S5. Ans.(b)
Sol. Total deduction of T = PF deduction +4000
Let the basic salary of $T$ be Rs. $x$
So, $5700=10 \%$ of $x+4000$
$\Rightarrow \mathrm{x} / 10=5700-4000$
$\Rightarrow x / 10=1700$
$\Rightarrow x=$ Rs. 17000
Net salary $=17000+21600-5700=38600-5700=$ Rs. 32900

S6. Ans.(a)
Sol. Students with work experience
$=36 \% \times 20 \% \times 2000+10 \%$ [ $38 \%$ of 2000 ]
$=2000 \times[36 \% \times 20 \%+38 \% \times 10 \%]=220$
Now marketing students with work experience $=$ $40 \%$ of $220=88$
So, total marketing students $=22 \%$ of $2000=440$
So, Marketing students without work experience $=$ $440-88=352$

## S7. Ans.(b)

Sol. Number of students specializing systems $=360$
Number of engineers specializing systems = $36 / 100 \times 50 / 100 \times 2000=360$
So, number of non-engineers specializing systems $=$ 0
Alternatively, this question can be done by seeing only the percentage values too.

## S8. Ans.(c)

Sol. Number of students specializing in finance $=25 \%$ of $2000=500$
Total number of CA or commerce students
$=(20+4) \%$ of $2000=480$
Difference $=500-480$
$=20$

S9. Ans.(d)

## Quant DI Test

Sol. Since total number of students doing graduation in 1998 in not known, this question cannot be answered.

S10. Ans.(b)
Sol. Number of engineers who specialized in finance $=30 \% \times 36 \% \times 2000=216$
Number of commerce students who specialized in finance $=40 \% \times 20 \% \times 2000=160$
So, number of Science graduates specializing in finance $=(25 \%$ of 2000) $-216-160=124$
$\therefore \%$ of Science students specializing in finance
$=\frac{124}{18 \% \text { of } 2000} \times 100=34.44 \%$

S:11
S. Ans.(b)

Sol. Speed of car $=\frac{\text { Distance covered }}{\text { Time taken }}$
$=\frac{720}{9}=80 \mathrm{~km} / \mathrm{h}$
Now, speed of bus $=\frac{3}{4} \times 80=60 \mathrm{~km} / \mathrm{h}$
Speed of train $=\frac{27}{15} \times 60=108 \mathrm{~km} / \mathrm{h}$
Distance covered by train in 7 h
$=108 \times 7=756 \mathrm{~km}$
S:12
S. Ans.(c)

Sol. Let the train meet after xh of 5 am .
So, time taken by train $B$ is $(x-2) h$
Speed of train $A=62 \mathrm{~km} / \mathrm{h}$
Speed of train B $=59 \mathrm{~km} / \mathrm{h}$
Total distance covered $=827 \mathrm{~km}$
According to the question,
$62 \mathrm{x}+59(\mathrm{x}-2)=827$
$62 \mathrm{x}+59 \mathrm{x}-118=827$
$121 x=827+118$
$121 \mathrm{x}=945$
$x=\frac{945}{121}=7 \mathrm{~h} 48 \mathrm{~min} 35 \mathrm{~s}$
Thus, the train will meet after
7 h 48 min 35 s of am
i.e. at $12: 48: 35 \mathrm{p} . \mathrm{m}$.
S.. Ans.(d)

Sol. 2nd term $=1$ st term $-(12)^{2}=789-144=645$;
3 rd term $=(2$ nd term $)-(10)^{2}=645-100=545$;
4 th term $=(3$ rd term $)-(8)^{2}=545-64=481$;
Sth term $=(4$ th term $)-(6)^{2}=481-36=445$.
$\therefore 440$ is wrong.
$\mathrm{S}: 14$
S'. Ans.(a)
Sol. 2nd term $=(1$ st term $)+2^{2}=32+4=36$;
3rd term $=(2$ nd term $)+3^{2}=36+9=45$;
4 th term $=(3$ rd term $)+4^{2}=45+16=61$;
5 th term $=(4$ th term $)+5^{2}=61+25=86$.
$\therefore 3$ rd term should be 45 instead of 41 .

S15. Ans.(a)
Sol. There are two sequences ( $3,9,67.5,810$ ) and (4, 22.5, 202.5)

Pattern is: (1st term $\times 3$ ), ( 2 nd term $\times 7.5$ ), ( 3 rd term $\times 12$ ) for the first sequence and (1st term $\times 5$ ), ( 2 nd term $\times 9$ ) and so on for the second sequence.

