## DATA INTERPRETATION-VI

Directions (Q. 1-5): Study the following graph and answer the questions based on it.
The following graph shows the time taken by trains to travel between two different Railway stations $X$ and $Y$, on parallel lines.


Following table shows the timetable and station from which a particular train has started.

| Train | Station | Departure <br> Time |
| :---: | :---: | :---: |
| A | X | 6 am |
| B | Y | 7 am |
| C | X | 8 am |
| D | Y | 8 am |
| E | X | 7 am |
| F | Y | 6 am |

1. Owing to communal tension in city ' X ', train ' A ' started two hours late but train 'C' started on scheduled time. ' C ' reaches ' Y ' and returns immediately and meets ' $A$ ' at a point ' $W$ '. Distance between ' $W$ ' and ' $Y$ ' is what per cent of the distance between ' $X$ 'and ' $W$ ', if the rail track is laid between the two cities on the shortest route?
a) Can't say
b) $75 \%$
c) $133.33 \%$
d) $80 \%$
e) None of these

ANSWER: b
The distance between A and C be 20 km [i.e. L.C.M of $(10,4)]$
$\therefore$ Speed of train $\mathrm{A}=\frac{20}{10}=2 \mathrm{kmph}$
Speed of train C $=\frac{20}{4}=5 \mathrm{kmph}$
Since A starts 2 hours late both A and B start at 8 am from X
Let ' $W$ ' be at a distance of $k$ from $Y$ then


Then the time taken by A to travel $(20-k)$ and the time taken by B to travel (20 +k ) are same
$\therefore \frac{20-k}{2}=\frac{20+k}{5} \Rightarrow 100-5 \mathrm{k}=40+2 \mathrm{k}$

$$
\therefore \mathrm{k}=\frac{60}{7}
$$

$\therefore \mathrm{YW}=\frac{60}{7} \quad \mathrm{XW}=20-\frac{60}{7}=\frac{80}{7}$
Required percentage $=\frac{\left(\frac{60}{7}\right)}{\left(\frac{80}{7}\right)} \times 100=75 \%$
2. At what time approximately do the two trains ' $A$ ' and ' $D$ ' meet?
a) 9 am
b) 9:30 am
c) 10 am
d) 10:30 am
e) 11 am

## ANSWER: c

Distance between A and D be 70 km [i.e. L.C.M of 10 and $\frac{7}{2}$ ]
$\therefore$ Speed of $\mathrm{A}=\frac{70}{10}=7 \mathrm{kmph}$
Speed of $D=\frac{70}{3.5}=20 \mathrm{kmph}$
Distance travelled by A from 6 am to $8 \mathrm{am}=7 \times 2=14 \mathrm{~km}$
So ( $70-14=56$ ) km should be covered by both the trains with a relative speed
of
$7+20=27 \mathrm{~km}$.
Time taken by A and $\mathrm{D}=\frac{56}{27} \cong 2 \mathrm{~h} 5 \mathrm{~min}$
$\therefore$ Two trains meet at $8 \mathrm{am}+2 \mathrm{~h} 5 \mathrm{~min}=10.05 \mathrm{am} \cong 10 \mathrm{am}$
3. At what time approximately do the trains ' A ' and ' B ' meet?
a) Can't say
b) $1: 32: 18 \mathrm{pm}$
c) $12: 32: 18 \mathrm{pm}$
d) $2: 23: 18 \mathrm{pm}$
e) None of these

## ANSWER: c

Distance between A and B be $80 \mathrm{~km}[$ L.C.M of $(10,16)=80]$
Speed of $A=\frac{80}{10}=8 \mathrm{kmph} \quad$ Speed of $B=\frac{80}{16}=5 \mathrm{kmph}$
Distance travelled by A from 6 am to $7 \mathrm{am}=8 \times 1=8 \mathrm{~km}$
: Remaining 8o-8=72 km should be covered by both A and B in opposite directions.
$\therefore$ Time taken by A and $\mathrm{B}=\frac{72}{8+5}=\frac{72}{13}=5 \frac{7}{13} h=5 \mathrm{~h} 32 \mathrm{~min} 18 \mathrm{sec}$
$\therefore$ Two trains meet at $7 \mathrm{am}+5 \mathrm{~h} 32 \mathrm{~min} 18 \mathrm{sec}=12: 32: 18 \mathrm{pm}$
4. Which of the following shows the ratio of speeds of the trains ' A ', ' B ' and ' C '? Assume that all the trains follow parallel routes and they are running at a uniform speed.
a) $8: 5: 20$
b) Can't say
c) $5: 8: 2$
d) $2: 8: 5$
e) None of these

## ANSWER: a

For a given distance the speeds ratio is inversely proportional to respective journey periods ratio.

Journey periods ratio of A : B:C=10:16:4=5:8:2
$\therefore$ Their speeds ratio $=\frac{1}{5}: \frac{1}{8}: \frac{1}{2}=8: 5: 20$
5. Speed of the train ' $B$ ' during the journey from $Y$ to $X$ is what per cent of the speed of E ?
a) Can't say
b) $266.66 \%$
c) $137.5 \%$
d) $37.5 \%$
e) None of these

ANSWER: d
Applying the same principal as used in Q. No. 4 speeds ratio of $B$ and $E=\frac{1}{16}: \frac{1}{6}=$ $3: 8$
$\therefore$ Required percentage $=\frac{3}{8} \times 100=37.5$
Directions (Q. 6-10): Study the following graphs and answer accordingly:
The following pie-chart shows the percentage of number of students passed in PO examination from different parts of the country in 2009.


The following graph shows the percentage of students who passed their graduation (freshers) in 2009.

6. If in 2009 the total passed candidates from different parts of the country was 650, then how many non-fresher candidates from AP passed the examination in 2009?
a) 200
b) 195
c) 198
d) 204
e) None of
these
ANSWER: c
$20 \%$ of candidates from AP freshers so the remaining $80 \%$ are non-freshers.

* Non-fresher candidates passed from $\mathrm{AP}=650 \times \frac{138}{1 \theta \theta} \times \frac{80}{100}=197.6=198$

7. If in 2009 the total number of fresher's from Kerala was 160 , then how many non-fresher candidates passed the exam from Others?
a) 1398
b) 1588
c) 640
d) 1408
e) None of these

ANSWER: d
Number of fresher's from Kerala $=10 \% \times \frac{25}{100}=2.5 \%$
Number of non-fresher's from others $=25 \% \times\left(\frac{100-12}{100}\right)=25 \% \times \frac{88}{100}=22 \%$
Their ratio $=2.5: 22=5: 44$
: Non-fresher's from others $=\frac{160}{5} \times 44=1408$
8. If total passed candidates from TN in 2009 was 112 , what is the ratio between the number of fresher's from AP and that of non-fresher's from Karnataka?
a) $760: 187$
b) $187: 760$
c) $40: 11$
d) $11: 40$
e) None of
these

## ANSWER: e

Number of freshers from AP $=38 \% \times \frac{20}{100}=7.6 \%$
Number of non-freshers from Karnataka $=11 \% \times\left(\frac{100-15}{100}\right)=9.35 \%$
$\therefore$ Required ratio $=7.6 \%: 9.35 \%=760: 935=152: 187$

## www.sakshieducation.com

9. If there is an increase of $10 \%$ and $20 \%$ candidates from AP and Others in year 2010 respectively, and the number of total passed candidates from Karnataka in 2009 was 77, what would be the approximate total passed candidates from AP and Others in 2010?
a) 210
b) 480
c) 450
d) 500
e) 550

ANSWER: d
Number of candidates passed from AP and others in 2010 would be $38 \times \frac{110}{100}=$ 41.8\%
and $25 \times \frac{120}{100}=30 \%$ respectively .
$\therefore$ Total candidates passed from AP and others in $2010=41.8+30=71.8 \%$ The value $=\frac{77}{11} \times 71.8=502.6 \cong 500$
10. If the non-fresher candidates from TN in 2009 was 60 , how many candidates passed the exam from all parts of the country?
a) 400
b) 300
c) 350
d) 450
e) None of
these

## ANSWER: e

Non-freshers from TN $=16 \% \times\left(\frac{100-25}{100}\right)=12 \%$
Total number of candidates $=\frac{60}{12 \%}=\frac{60 \times 100}{12}=500$

