Direction (1-5): Study the data given below and answer the following question. The pie charts shown below shows the distance covered by a boat moving upstream and downstream in different days of a week. And the table shows the speed of stream in km/hr. in different days of a week.

The table shows the speed of the stream in different days in the week and some data are missing.

Downstream distance=2400km

Upstream Distance=1800km
1) If the time taken by boat to travel upstream on Friday is equal to the time taken by it to travel downstream on Monday and the speed of boat in still water on Monday is 15 kmph then find the speed of boat in still water on Friday?
   a) 14.5kmph
   b) 15kmph
   c) 16.5kmph
   d) 12kmph
   e) None of these

2) If the speed of boat in still water on Tuesday was 10kmph and the speed of boat in still water on Wednesday was 80% of Tuesday and time taken to travel downstream on Tuesday is 18 hrs more than the time taken by it to travel upstream on Wednesday, then find the speed of stream on Tuesday?
   a) 2kmph
   b) 6kmph
   c) 4kmph
   d) 8kmph
   e) None of these

3) On Thursday the speed of stream is 33(1/3)% of the speed of the stream on Wednesday. If the time taken to cover upstream distance on Thursday is 20% more than the downstream distance, what was the speed of boat on that day?
   a) 15(3/7) kmph
   b) 18(3/7) kmph
   c) 12(3/7) kmph
   d) 11(3/7) kmph
   e) None of these

4) The speed of boat on Monday is 12 kmph more than the speed of stream on that day and time for upstream journey on Friday is same as time for upstream journey on Monday. What was the downstream journey time (approximate) on Friday?
   a) 12 hours
   b) 16 hours
   c) 25 hours
   d) 24 hours
   e) 18 hours

5) On Thursday ratio of speed of boat in still water in going upstream to downstream is 5:3 and also difference in speed of boat in still water in going upstream and downstream is 4 kmph. If the time taken by boat to cover upstream and downstream is same on Thursday, find the speed of stream?
   a) 3(11/29) kmph
   b) 2(11/29) kmph
   c) 4(12/19) kmph
   d) 5(13/19) kmph
   e) None of these

Directions (6-10): Study the following information carefully and answer the given questions:

There are three Cities City A, City B and City C. Certain Number of Projects are allocated to these cities Under Scheme P, Scheme Q and Scheme R in 2018.

**Scheme P:** The Number of Projects in City B is 2/3rd of the Number of projects in city B under Scheme Q. The Number of Projects in City C is 4/5th of the Number of projects in city C under Scheme R. The Total Number of Projects in city A and City C is equal under Scheme P.
Scheme Q: The Total Number of Projects under Scheme Q is 375. The Number of Projects in City B is 75 less than that of number of projects in City A and C together. The Number of Projects in City A is 5/6th of the number of projects in City A under Scheme R.

Scheme R: The Number of Projects under Scheme R is 4/5th of the number of Projects under Scheme Q. The Number of Projects in City A is equal to the number of Projects in City B under Scheme Q. The Number of Projects in city C under Scheme Q and Scheme R is Equal.

6) In 2019, the projects allocated for city B under Scheme Q is increases by 30%, and the project allocated for city C under scheme R is decreases by 45%, then the total number of projects in 2019 for city B under scheme Q and City C under Scheme R is equal to total number of projects in which of the following Cities in 2018?
   a) City C under Scheme P and City A under scheme R together
   b) City B under Scheme P and City C under scheme P together
   c) City A under Scheme Q and City B under scheme R together
   d) City C under Scheme Q and City A under scheme R together
   e) None of those given as options

7) What is the average number of projects under Scheme Q and Scheme R for City C and City B together?
   a) 75       b) 80       c) 100       d) 150       e) None of those given as option

8) If the cost of each projects is 15 crore for scheme P, and 19 Crore for Scheme Q, and 17 crore for Scheme R, then how much fund allocated for City C under these three schemes (In Million)?
   a) 48000     b) 3800     c) 4800     d) 54000     e) None of those given as option

9) What is the total number of projects under Scheme P and Scheme Q together?
   a) 560     b) 675     c) 720     d) None of those given as option     e) 635

10) In City X, The number of projects allocated under scheme P is 20% more than that of number of projects allocated for city C under scheme P, and the number of projects allocated under scheme Q is 40% less than that of number of projects allocated for city B under scheme Q and the total number of projects in city X is 300, then how many projects are allocated for City X under scheme R?
   a) 154     b) 100     c) 94     d) 114     e) None of those given as option

Directions (11-15): Study the following information carefully and answer the given questions:

The line graph shows that total number of manufacturing parts produced by five different companies in the year 2016 and 2017.
The table shows that percentage of Defective parts and percentage of non-defective parts that are not passed the quality test in the year 2016.

<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>% of Defective parts</th>
<th>% of non-defective parts that are not passed the quality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15%</td>
<td>50%</td>
</tr>
<tr>
<td>B</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>C</td>
<td>25%</td>
<td>10%</td>
</tr>
<tr>
<td>D</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>E</td>
<td>28%</td>
<td>50%</td>
</tr>
</tbody>
</table>

11) If both the years the percentage of defective parts from company D is equal, and in 2017 only 10% of non-defective parts are not passed the quality test for company D, then what is the total number of non-defective parts that are passed the quality test in both years from company D?
   a) 1656   b) 306   c) 1556   d) 1666   e) None of those given as option

12) What is the ratio of Non-defective parts that are not passed by quality test from company B and C in 2016 to the Non-defective parts that are passed by quality test from the same companies together in 2017, if the
percentage of Non-defective parts that are not passed by quality test from company B and C are equal in both the years?

a) 3: 7  
b) 53: 52  
c) 4 : 9  
d) 19 : 17  
e) Cannot be determined

13) In 2017, the percentage of defective parts from company A, B, and E are 20%, 25% and 15% respectively, then the total number of Non-defective parts that are passed from quality test from company C and D in 2016 is approximately what percentage more or less than that of the total number of Non-defective parts from A, B and E together in 2017?

a) 38% More  
b) 50% less  
c) 28 % More  
d) 40% less  
e) None of those given as option

14) What is the average number of non-defective parts that are not passed the quality test from all the company except D in 2016?

a) 254  
b) 248  
c) 220  
d) None of those given as option  
e) 252

15) What is the difference between the non- defective parts that are passed the quality test from Company B and C together in 2016 to the non- defective parts that are not passed the quality test from Company A, D and E together in 2016?

a) 664  
b) 786  
c) 544  
d) 684  
e) None of those given as option

Directions (16 – 20) Study the following information carefully and answer the given questions:

The following table shows the number of classes taken by each tutors in different days and the total amount given to the professor per class for the certain course also given

<table>
<thead>
<tr>
<th>Tutors</th>
<th>Number of classes taken on Monday, Tuesday and Wednesday by each</th>
<th>Number of classes taken on Thursday and Friday by each</th>
<th>Salary per class (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>0</td>
<td>5000</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>-</td>
<td>8000</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>3</td>
<td>6000</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>2</td>
<td>4000</td>
</tr>
</tbody>
</table>

Note:
Saturday and Sunday are holidays
“-“ is missing value, we have to find the value according to the question.

16) Find the ratio of the number of lectures taken by A to that of the number of lectures taken by D in a week?

a) 3 : 5  
b) 4 : 7  
c) 5 : 9  
d) 11 : 13  
e) None of these

17) Find the earnings made by C if he teaches for 6 weeks?

a) Rs. 306000  
b) Rs. 282000  
c) Rs. 348000  
d) Rs. 324000  
e) None of these
18) Find the difference between the earnings made by C for 3 weeks to that of the earnings made by D for 2 weeks?
   a) Rs. 74000          b) Rs. 66000          c) Rs. 82000          d) Rs. 70000          e) None of these

19) If B takes 2 classes each on Thursday and Friday, then how much he can earn in a week?
   a) Rs. 116000         b) Rs. 104000         c) Rs. 95000         d) Rs. 88000         e) None of these

20) If the amount of Rs. 3.12 lakhs was given to the tutor B for 3 weeks, then find the number of class/classes taken by the tutor B in Thursday and Friday each?
   a) 2                  b) 4                  c) 3                  d) 1                  e) None of these

Directions (21-25): Bar chart given below shows different discount rates are given for different products of different shops, for some products discount rate is missing which you have to find out according to data given in different questions if they are necessary. Answer the following questions with the help given Bar chart. Selling price is same for a particular product (excluding cooking oil and sugar) for all shops. (MP= market price, CP=Cost price, SP= selling price)

21) If the average MP of Soap for all three shops is 3990 then find MP of soap for shop B?
   a) Rs3450           b) Rs Rs3600           c) Rs4270           d) Rs3300           e) None of these

22) Difference between MP of Olive oil of Shop A and shop B is Rs 504 then find MP of Olive oil for Shop C?
   a) Rs5814           b) Rs5678           c) Rs4678           d) Rs6234           e) None of these

23) If MP of cooking oil is same for all shops and Average SP of cooking oil for Shop A and shop B is Rs 3728 and average SP of cooking oil for shop B and shop C is Rs 3368, then find SP of cooking oil by shop C?
24) If difference between MP and SP for rice in shop B is Rs 741 find average MP of rice of shop A and shop C?
a) Rs6420  b) Rs5360  c) Rs5440  d) Rs6640  e) None of these

25) If market price is equal for all shops for sugar. Ratio of discount for sugar of shop A and B is 1/3, difference between SP for sugar of shop A and C is Rs 780, if difference SP of shop A is 680 more than shop B, then find SP of sugar by shop C?
a) Rs2428  b) Rs2256  c) Rs2786  d) Rs2280  e) None of these

Direction (26-30): Follow the given instruction to give the answer of the following questions.

Total number who attended the workshop = Number of Literates + Number of illiterates

<table>
<thead>
<tr>
<th>Day</th>
<th>No. of literates(males+Females)</th>
<th>Overall ratio (illiterate : literates) (out of those who attended)</th>
<th>Number of males (literates + illiterates) (out of those who attended)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>420</td>
<td>5:6</td>
<td>250</td>
</tr>
<tr>
<td>Tuesday</td>
<td>350</td>
<td>3:5</td>
<td>240</td>
</tr>
<tr>
<td>Wednesday</td>
<td>320</td>
<td>5:4</td>
<td>320</td>
</tr>
<tr>
<td>Thursday</td>
<td>300</td>
<td>6:5</td>
<td>300</td>
</tr>
<tr>
<td>Friday</td>
<td>420</td>
<td>2:3</td>
<td>320</td>
</tr>
</tbody>
</table>

26) The total number of people (literates + illiterates) who attended the workshop on Monday was what % more than those who attended on Friday?
a) 12%  b) 10%  c) 15%  d) 18%  e) None of these

27) On Friday, if 192 illiterate males attended the workshop, what was the number of literate females who attended the workshop on that day?
a) 292  b) 300  c) 275  d) 280  e) None of these

28) On Saturday, if the number of illiterates (males + females) increased by 40 % and that of literates (males + females) reduced by 20 %, as compared to Tuesday, what was the difference between the number of literates and illiterates who attended the workshop on Saturday?
a) 12  b) 14  c) 15  d) 18  e) None of these

29) What is the average number of illiterates (males + females) who attended the workshop on Monday, Wednesday and Thursday?
a) 390  b) 400  c) 300  d) 370  e) None of these
30) What is the ratio of the total number of males (Literates + Illiterates) who attended the workshop on Tuesday and Friday together to that of females (literates and Illiterates) who attended the workshop on the same days together?
   a) 5:9   b) 9:7   c) 7:9   d) 1:3   e) None of these

Directions (31-35): Study the information carefully to answer the following questions.

Data regarding number of employees working in various departments in Company A and B in the year 2018. Both Companies have six departments namely Production, HR, Finance, R&D, Marketing and Accounts. The total number of employees in company A is 9000. In Company A, number of employees in production, HR and finance together is 60% of the total number of employees. The number of employees in R&D, Marketing and Accounts were 1300, 1440 and 860 respectively. The number of employees in Production department was 25% more than that of finance department. In company B, the number of employees in Marketing was 900 and they constituted 12% of the total number of employees. Also the number of employees in Marketing was 40% less than that of HR department. The number of employees in production from company B was 10% less than the same department from Company A. The Number of employees in accounts is 500. Number of employees in finance and R&D department is same. Total Number of employees in finance and R&D together were double the total Number of employees in Marketing and accounts together.

31) What is the difference between the total Number of employees in Marketing and accounts together in Company A and that in the same courses together in Company B?
   a) 700   b) 200   c) 400   d) 600   e) 900

32) 3/4th of the number of R&D employees in Company A was female. If the number of female R&D employees in Company A is less than that of Company B by 175, what is the number of male R&D employee in Company B?
   a) 600   b) 400   c) 500   d) 100   e) 800

33) What is the respective ratio between the total number of employees in finance and production together in Company A and that in the same courses together in company B?
   a) 1:9   b) 7:3   c) 4:9   d) 9:8   e) 3:2

34) Number of HR employees in Company B is what percent less than that in Company A?
   a) 10/4%   b) 50/3%   c) 26/7%   d) 12/6%   e) 43/6%

35) Total number of employees in Company A, is what percent to that of in Company B?
   a) 120%   b) 160%   c) 216%   d) 567%   e) 230%

Directions (36-40): Study the information carefully to answer the following questions.

In the following table there are five colleges in which total student and percentage of arts students and the ratio of civil and mechanical engineering students are given. Calculate the missing data if necessary.
<table>
<thead>
<tr>
<th>College</th>
<th>Total number of students</th>
<th>Percentage of arts students</th>
<th>Ratio of civil to mechanical engineering students</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1500</td>
<td>35%</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>-</td>
<td>40%</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>2100</td>
<td>-</td>
<td>7:3</td>
</tr>
<tr>
<td>E</td>
<td>1750</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

36) If the ratio of boys and girls in college A for civil engineering students are 4:1 and the civil engineering students are 50% more than the mechanical engineering students. Then find the difference of boys and girls in civil department?

a) 120  
b) 430  
c) 351  
d) 320  
e) 270

37) If the total engineering student in college E is 525 and students in civil department are 12 ½% less than the students in mechanical department and the engineering student in college D is 735. Then find ratio of civil engineering student in college D and E?

a) 445:247  
b) 441:243  
c) 453:247  
d) 441:247  
e) 441:249

38) If arts student in college A is 375 less than arts student in college B. Then the total student in college D is what percent more or less than the total students in college B?

a) 5 1/7%  
b) 8 1/7%  
c) 2 1/7%  
d) 7 1/7%  
e) 1 1/7%

39) If total student in college C is 1380 and total arts student in college C is equal to the total students in engineering. And the ratio of boys and girls in college C in arts is 5:1. If 20% of boys are transferred to college E, then find the total students in college E?

a) 1546  
b) 1456  
c) 1585  
d) 1865  
e) 1687

40) Suppose there is another college X in which arts students are 2/5th of arts student in college A and engineering student in college X is 40% of total students of college D then what is the total students in X?

a) 1050  
b) 1205  
c) 1640  
d) 1550  
e) 4520

Directions (41-45): Given below is table which shows the ratio of efficiency of both Anand and Abinav on different days and total time taken by Anand and Abinav to complete the work 1 if they complete whole work with the efficiency of different days.
41) Anand and Abinav both started to complete work 1 on Jan 2 but Anand left after working for 2 hours. Another person Ajay whose efficiency is 60% of the efficiency of Anand (as of Jan 2) joins with Abinav. Abinav leaves 2 hours before the completion of work then Ajay alone finishes the remaining work. What is the total time in which work 1 is completed.

a) 115/2 hours  
b) 111/13 hours  
c) 108/19 hours  
d) 110/19 hours  
e) 110/13 hours

42) If a part of work 2 completed by 4 women in 5 hours equals to the part of work 2 done by Abinav on Jan 3 in 7 hours and ratio of efficiency of a women and a children to complete work 2 is 5 : 3 then in what time work 2 will be completed by 3 children.

a) 120/9 hours  
b) 200/9 hours  
c) 100/11 hours 
d) 210/11 hours  
e) 150/21 hours
43) $x$ can complete a work in $(n - m)$ hours while $y$ can complete the same work in $(n + m)$ hours where $m$ is the time taken by Anand to complete work 2 on Jan 2 and $n$ is time taken by Anand to complete work 2 on Jan 5. Find the time in which $x$ and $y$ together can complete the work

a) $\frac{3}{2}$ hours  

b) $\frac{7}{4}$ hours  

c) $\frac{7}{5}$ hours  

d) $\frac{8}{3}$ hours  

e) $\frac{9}{5}$ hours

44) Anand and Abinav started to complete work 1, alternatively starting from Anand on first hour on Jan 1. Then time taken by Anand and Abinav in completing 80% of work 1, alternatively on Jan 1 is what percent more or less than time taken by Anand and Abinav together to complete work 2 together on Jan 5.

a) 3%  

b) 5%  

c) 8%  

d) 15%  

e) 6%

45) If Abinav with another person Ajay works on work 2 on Jan 5 for 2 hours than 80% of work 2 is completed then, time taken by Ajay alone to finish work 2 is what percent to time taken by Abinav to finish work 1 with efficiency of Jan 5

a) $\frac{500}{27}$%  

b) $\frac{400}{13}$%  

c) $\frac{300}{17}$%  

d) $\frac{400}{21}$%  

e) $\frac{500}{21}$%

Directions (46–50): Study the following information carefully and answer the questions give below: (2 marks)
The following table shows the ratio of time taken by pipes to fill the tank.

<table>
<thead>
<tr>
<th></th>
<th>A:F</th>
<th>B:G</th>
<th>C:H</th>
<th>D:J</th>
<th>E:J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>3:4</td>
<td>3:2</td>
<td>5:6</td>
<td>4:5</td>
<td>9:10</td>
</tr>
</tbody>
</table>

46) Pipe A and Pipe B opened simultaneously for 4 minutes, then closed and then pipe F and pipe Q are opened for 2 minutes, then closed. Find the time taken by pipe G to fill the remaining part of the tank.
   a) 7 minutes b) 169/36 minutes c) 5 minutes d) 178/39 minutes e) None of these

47) Efficiency of pipe K is twice the efficiency of pipe A and efficiency of pipe L is 1.5 times the efficiency of pipe S. Pipe C and pipe K are opened simultaneously for 3 minutes and then closed. Find the time taken by pipe L and pipe R together to empty the filled part of the tank.
   a) 4 minutes b) 47/12 minutes c) 39/10 minutes d) 5 minutes e) None of these

48) Time taken by pipe M to fill the tank is 20% more than the time taken by pipe I to fill the tank and efficiency of pipe N is twice the efficiency of pipe J. Time taken by pipe M and pipe N to fill the tank is what percent of the time taken by pipe D and pipe E together to fill the tank.
   a) 67.67% b) 74.44% c) 98.48% d) 81.14% e) 83.33%

49) Find the respective ratio of time taken by pipe B, pipe G and pipe P together to fill the tank and time taken by pipe E, pipe H and pipe S together to fill the tank.
   a) 4:5 b) 5:6 c) 6:7 d) 3:4 e) None of these

Click Here for IBPS PO Mains 2018 Quality Mocks | Click Here for IBPS Clerk 2018 Quality Mocks
Follow us: Telegram, Facebook, Twitter, Instagram, G+
50) Pipe A, pipe C and pipe E are opened simultaneously for 4 minutes then closed and pipe P and pipe S are opened for 2 minutes then closed. Find the time taken by pipe G and pipe J to fill the remaining part of the tank.

a) 27/13 days  b) 41/27 days  c) 31/11 days  d) 51/29 days  e) None of these

### Answers and Explanations

**Direction (1-5):**

1. **Answer: A**

<table>
<thead>
<tr>
<th>Day</th>
<th>Upstream distance</th>
<th>Downstream distance</th>
<th>Speed of stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>576</td>
<td>552</td>
<td>8</td>
</tr>
<tr>
<td>Tuesday</td>
<td>324</td>
<td>432</td>
<td>-</td>
</tr>
<tr>
<td>Wednesday</td>
<td>360</td>
<td>672</td>
<td>12</td>
</tr>
<tr>
<td>Thursday</td>
<td>288</td>
<td>408</td>
<td>-</td>
</tr>
<tr>
<td>Friday</td>
<td>252</td>
<td>336</td>
<td>4</td>
</tr>
</tbody>
</table>

   \[
   \frac{252}{b-4} = \frac{552}{15} + 8 \\
   2(b-4) = 21 \\
   b = 14.5 \text{ kmph}
   \]

2. **Answer: A**

   Speed of boat on Tuesday = 10 kmph
   Speed of boat on Wednesday = 10*80/100 = 8 kmph
   Downstream distance on Tuesday = 18/100*2400 = 432 km
   Upstream distance on Wednesday = 20/100*1800 = 360
   Speed of stream on Wednesday = 12 kmph
   \[
   \frac{432}{10+w} - \frac{360}{8+12} = 18 \\
   432/10+w = 36 \\
   10+w = 12 \\
   W = 2 \text{ kmph}
   \]

3. **Answer: A**

   Speed of the stream on Thursday = 12*100/300 = 4 kmph
   \[
   \frac{120}{100} (\text{Downstream journey time}) = \text{upstream journey time} \\
   \frac{120}{100} (\frac{408}{b+4}) = \frac{288}{b-4} \\
   6(102/(b+4)) = 72/(b-4) \\
   17b-68=10b+40
   \]
7b=108
b=108/7 = 15 3/7

4. Answer: C
Speed of stream on Monday=8kmph
Speed of boat on Monday=8+12=20kmph
Upstream journey on Monday=576/12=48 hours
Stream speed on Friday=4kmph
Upstream journey time on Friday= 48 hours

252/b - 4 = 48
b=9.25 kmph
Downstream journey time on Friday=336/(4+9.25)
=25 hours (Approximately)

5. Answer: A
Difference 5x-3x=4
2x=4
X=2
Speed of boat in still water in upstream=5(2)=10kmph
Speed of boat in still water in downstream=3(2)=6kmph
Distance of downstream on Thursday=408
Distance of upstream on Thursday=288

408/(6+w)=288/10-w
W=3(11/29) kmph

Directions (6-10):
Solution:

<table>
<thead>
<tr>
<th>City/Schemes</th>
<th>Scheme P</th>
<th>Scheme Q</th>
<th>Scheme R</th>
</tr>
</thead>
<tbody>
<tr>
<td>City A</td>
<td>80</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>City B</td>
<td>100</td>
<td>150</td>
<td>50</td>
</tr>
<tr>
<td>City C</td>
<td>80</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>375</td>
<td>300</td>
</tr>
</tbody>
</table>

Explanation:

**Scheme Q:** The Total Number of Projects under Scheme Q = 375

The Number of Projects in City B is 75 less than that of number of projects in City A and C together.

Consider the number of projects in City A and C is X, then X + (X – 75) = 375, on solving we get, X=225, then number of projects in City B = 150 projects.
**Scheme P:** The Number of Projects in City B is $2/3$rd of the Number of projects in city B under Scheme Q.

**Scheme P:** Number of Projects in City B = $2/3$rd *150 = 100 projects.

<table>
<thead>
<tr>
<th>City/Schemes</th>
<th>Scheme P</th>
<th>Scheme Q</th>
<th>Scheme R</th>
</tr>
</thead>
<tbody>
<tr>
<td>City A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City B</td>
<td>100</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>City C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>375</td>
</tr>
</tbody>
</table>

**Scheme Q:** The Number of Projects in City A is $5/6$th of the number of projects in City A under Scheme R.

<table>
<thead>
<tr>
<th>City/Schemes</th>
<th>Scheme P</th>
<th>Scheme Q</th>
<th>Scheme R</th>
</tr>
</thead>
<tbody>
<tr>
<td>City A</td>
<td></td>
<td>$5/6^{th}$ (Y)</td>
<td>Y</td>
</tr>
<tr>
<td>City B</td>
<td>100</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>City C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>375</td>
</tr>
</tbody>
</table>

**Scheme R:** The Number of Projects under Scheme R is $4/5$th of the number of Projects under Scheme Q.

Therefore total number of projects in Scheme R is 300.

The Number of Projects in City A is equal to the number of Projects in City B under Scheme Q.

Therefore number of projects in city A under scheme R is 150 projects.

<table>
<thead>
<tr>
<th>City/Schemes</th>
<th>Scheme P</th>
<th>Scheme Q</th>
<th>Scheme R</th>
</tr>
</thead>
<tbody>
<tr>
<td>City A</td>
<td>125</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>City B</td>
<td>100</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>City C</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>375</td>
<td>300</td>
</tr>
</tbody>
</table>

**Scheme R:** The Number of Projects in city C under Scheme Q and Scheme R is Equal. So there are 100 projects in city C under scheme R. And also for city B under scheme R should have 50 projects.
Scheme P: The Number of Projects in City C is \( \frac{4}{5} \)th of the Number of projects in city C under Scheme R. Number of Projects in City C = \( \frac{4}{5} \times 100 = 80 \)

The Total Number of Projects in city A and City C is equal under Scheme P. Therefore number of projects in City A is 80 projects. So the final table becomes

<table>
<thead>
<tr>
<th>City/Schemes</th>
<th>Scheme P</th>
<th>Scheme Q</th>
<th>Scheme R</th>
</tr>
</thead>
<tbody>
<tr>
<td>City A</td>
<td>80</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>City B</td>
<td>100</td>
<td>150</td>
<td>50</td>
</tr>
<tr>
<td>City C</td>
<td>80</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>375</td>
<td>300</td>
</tr>
</tbody>
</table>

6. Answer: D
In 2019, The projects allocated for city B under Scheme Q is increases by 30%
\[ = 150 \times \frac{130}{100} \]
\[ = 195 \]
The project allocated for city C under scheme R is decreases by 45%
\[ = 100 \times \frac{55}{100} = 55 \]
Thus the total number of projects in 2019 for city B under scheme Q and City C under Scheme R = 250
From the given options 250 projects obtained only from option D.

7. Answer: C
The average number of projects under Scheme Q and Scheme R for City C and City B together =
\[ \frac{(150+100+50+100)}{4} = \frac{400}{4} = 100 \]

8. Answer: A
Fund allocated for City C under these three schemes = \((15\times80) + (100 \times 19) + (100 \times 17) = 4800 \text{ crores} = 48000 \text{ Millions} \]

9. Answer: E
The total number of projects under Scheme P and Scheme Q together = 260+375 = 635 Projects

10. Answer: D
The number of projects allocated under scheme P is 20% more than that of number of projects allocated for city C under scheme \( P = 80 \times \frac{120}{100} = 96 \)
The number of projects allocated under scheme Q is 40% less than that of number of projects allocated for city B under scheme \( Q = 150 \times \frac{60}{100} = 90 \)
The total number of projects in city X is 300
Then number of projects allocated for City X under scheme R = 300-(96+90) = 114 projects

Directions (11-15):
11. Answer: C
<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>Total number of Manufacturing Parts</th>
<th>% of Defective parts</th>
<th>Defective parts</th>
<th>Non-Defective parts</th>
<th>% of non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are passed the quality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>640</td>
<td>15%</td>
<td>96</td>
<td>544</td>
<td>50%</td>
<td>272</td>
<td>272</td>
</tr>
<tr>
<td>B</td>
<td>1120</td>
<td>30%</td>
<td>336</td>
<td>784</td>
<td>25%</td>
<td>196</td>
<td>588</td>
</tr>
<tr>
<td>C</td>
<td>1440</td>
<td>25%</td>
<td>360</td>
<td>1080</td>
<td>10%</td>
<td>108</td>
<td>972</td>
</tr>
<tr>
<td>D</td>
<td>960</td>
<td>20%</td>
<td>192</td>
<td>768</td>
<td>25%</td>
<td>192</td>
<td>576</td>
</tr>
<tr>
<td>E</td>
<td>1200</td>
<td>28%</td>
<td>336</td>
<td>864</td>
<td>50%</td>
<td>432</td>
<td>432</td>
</tr>
</tbody>
</table>

Total number of manufacturing parts from company D in 2017 = 1360
From the given question there 20% parts that are defective in 2017 from company D = 1360 * 20 / 100 = 272
Non defective parts = 1360 - 272 = 1088
10% of non-defective parts are not passed the quality test for company D
= 10% of 1088 = 108
Non-defective parts that are passed the quality test for company D = 1088 - 108 = 980
The total number of non-defective parts that are passed the quality test in both years from company D = 576 + 980 = 1556 parts

12. Answer: E
There is no such information to find out the defective and non-defective parts from Company B and Company C in 2017. So we are not able to find out the Non-defective parts that are passed by quality test from company B and Company C in 2017. So cannot be determined is the answer.
13. Answer: D

<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>Total number of Manufacturing Parts</th>
<th>% of Defective parts</th>
<th>Defective parts</th>
<th>Non-Defective parts</th>
<th>% of non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are passed the quality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>640</td>
<td>15%</td>
<td>96</td>
<td>544</td>
<td>50%</td>
<td>272</td>
<td>272</td>
</tr>
<tr>
<td>B</td>
<td>1120</td>
<td>30%</td>
<td>336</td>
<td>784</td>
<td>25%</td>
<td>196</td>
<td>588</td>
</tr>
<tr>
<td>C</td>
<td>1440</td>
<td>25%</td>
<td>360</td>
<td>1080</td>
<td>10%</td>
<td>108</td>
<td>972</td>
</tr>
<tr>
<td>D</td>
<td>960</td>
<td>20%</td>
<td>192</td>
<td>768</td>
<td>25%</td>
<td>192</td>
<td>576</td>
</tr>
<tr>
<td>E</td>
<td>1200</td>
<td>28%</td>
<td>336</td>
<td>864</td>
<td>50%</td>
<td>432</td>
<td>432</td>
</tr>
</tbody>
</table>

In 2017,

<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>Total number of Manufacturing Parts</th>
<th>% of Defective parts</th>
<th>Defective parts</th>
<th>Non-Defective parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>960</td>
<td>20%</td>
<td>192</td>
<td>768</td>
</tr>
<tr>
<td>B</td>
<td>1280</td>
<td>25%</td>
<td>320</td>
<td>960</td>
</tr>
<tr>
<td>E</td>
<td>1000</td>
<td>15%</td>
<td>150</td>
<td>850</td>
</tr>
</tbody>
</table>

The total number of Non-defective parts that are passed from quality test from company C and D in 2016 = 972 + 576 = 1548

Total number of Non-defective parts from A, B and E together in 2017 = 768 + 960 + 850 = 2578

Required percentage = \([\frac{(2578 - 1548)}{2578}] \times 100\% = 39.99\% = 40\% less\)
### 14. Answer: E

<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>Total number of Manufacturing Parts</th>
<th>% of Defective parts</th>
<th>Defective parts</th>
<th>Non-Defective parts</th>
<th>% of non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are passed the quality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>640</td>
<td>15%</td>
<td>96</td>
<td>544</td>
<td>50%</td>
<td>272</td>
<td>272</td>
</tr>
<tr>
<td>B</td>
<td>1120</td>
<td>30%</td>
<td>336</td>
<td>784</td>
<td>25%</td>
<td>196</td>
<td>588</td>
</tr>
<tr>
<td>C</td>
<td>1440</td>
<td>25%</td>
<td>360</td>
<td>1080</td>
<td>10%</td>
<td>108</td>
<td>972</td>
</tr>
<tr>
<td>D</td>
<td>960</td>
<td>20%</td>
<td>192</td>
<td>768</td>
<td>25%</td>
<td>192</td>
<td>576</td>
</tr>
<tr>
<td>E</td>
<td>1200</td>
<td>28%</td>
<td>336</td>
<td>864</td>
<td>50%</td>
<td>432</td>
<td>432</td>
</tr>
</tbody>
</table>

The average numbers of non-defective parts that are not passed the quality test from all the company except D in 2016 =\((272+196+108+432)/4 = 252\)

### 15. Answer: A

<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>Total number of Manufacturing Parts</th>
<th>% of Defective parts</th>
<th>Defective parts</th>
<th>Non-Defective parts</th>
<th>% of non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are not passed the quality test</th>
<th>non-defective parts that are passed the quality test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>640</td>
<td>15%</td>
<td>96</td>
<td>544</td>
<td>50%</td>
<td>272</td>
<td>272</td>
</tr>
<tr>
<td>B</td>
<td>1120</td>
<td>30%</td>
<td>336</td>
<td>784</td>
<td>25%</td>
<td>196</td>
<td>588</td>
</tr>
<tr>
<td>C</td>
<td>1440</td>
<td>25%</td>
<td>360</td>
<td>1080</td>
<td>10%</td>
<td>108</td>
<td>972</td>
</tr>
</tbody>
</table>
The difference between the non-defective parts that are passed the quality test from Company B and C together in 2016 = 588 + 972 = 1560

The non-defective parts that are not passed the quality test from Company A, D and E together in 2016 = 272 + 192 + 432 = 896

Difference = 1560 – 896 = 664

Directions (16 – 20)

16. Answer: a)
Explanation:
The number of lectures taken by A in a week
= > (2*3) + (0*2) = 6
The number of lectures taken by D in a week
= > (2*3) + (2*2) = 6 + 4 = 10
Required ratio = 6 : 10 = 3 : 5

17. Answer: d)
Explanation:
The number of lectures taken by C in a week
= > (1*3) + (3*2) = 3 + 6 = 9
The number of lectures taken by C in 6 weeks
= > 9*6 = 54
The earnings made by C if he teaches for 6 weeks
= > 54*6000 = Rs. 324000

18. Answer: c)
Explanation:
The number of lectures taken by C in a week
= > (1*3) + (3*2) = 3 + 6 = 9
The earnings made by C for 3 weeks
= > 9*3*6000 = Rs. 162000
The number of lectures taken by D in a week
= > (2*3) + (2*2) = 6 + 4 = 10
The earnings made by D for 2 weeks
= > 10*2*4000 = Rs. 80000
Required difference = 162000 – 80000 = Rs. 82000

19. Answer: b)
Explanation:
B takes 2 classes each on Thursday and Friday
The number of classes taken by B in a week
= (3*3) + (2*2) = 9 + 4 = 13
B’s earning in a week
= > 13*8000 = Rs. 104000

20. Answer: a)
Explanation:
Total number of classes taken by the professor B in 3 weeks
= > 312000/8000 = 39 classes
According to the question,
(9*3) + 3*(Tuesday + Thursday) = 39
3*(Tuesday + Thursday) = 39 – 27
3*(Tuesday + Thursday) = 12
Tuesday + Thursday = 4 classes
The each 2 classes taken by the tutor B in Thursday and Friday

Directions (21-25):
21. Answer: B
(SP/75×100+SP/90×100+SP/80 100)/3=3990
Solving this we will get SP=2160
Then MP of soap by shop B= 2160/90×100=Rs 3600

22. Answer: A
SP/85×100-SP/95×100=504
SP= (504×17×19)/40
=4069.8
MP by shop C= (SP/70)×100 =Rs 5814

23. Answer: E
(MP×84)/100+(MP×x)/100=3728 ---(1)
(MP×x)/100+(MP×72)/100=3368 ---(2)
Subtracting equation 1 from equation 2 we get
(MP×12)/100=360
Thus MP= Rs 3000
Then SP of shop is 72% of MP which is Rs 2160

24. Answer: C
If discount is Rs 741 in shop B then SP of rice is= (741/15)×85=4199
MP of rice by shop A=(4199/65)×100=6460
MP of rice by shop C = (4199/95)×100=4420
Average of MP of these two shops is = Rs 5440
25. Answer: D
Ratio of discount for sugar by shop B is 30%
According to given question discount by shop A will be 10%
Thus we have mp×90/100 - mp×70/100=680
After solving this we have MP= Rs 3400
And difference between SP of shop A and shop C is 780
(i.e) 3400×90/100-sp of shop C=780
SP by shop C is= 3060-780= Rs2280

Direction (26-30):
26. Answer: B
Total number of people who attended the workshop on Monday
= 420 * (11/6) =770
Total number of people who attended the workshop on Friday
= 420 * (5/3) =700
Required % more = [(770-700)*100]/700= 10 %

27. Answer: A
Number of Literate males on Friday = 320-192= 128
Literate female on Friday =420-128= 292

28. Answer: B
Number of illiterate (males + female) on Tuesday = 350 * (3/5) =210
Now, Required difference = (210 * 140/100) – (350 * 80/100)
= 294 – 280 =14

29. Answer: D
Required average = {(420 * 5/6 + 320 *5/4 + 300 * 6/5)}/3
= (350 + 400 + 360)/3 =370

30. Answer: C
Number of Illiterate (male + female) on Tuesday = 350 * 3/5 = 210
Number of illiterate (males + females) on Friday = 320 * (5/4) =400
Number of females (literate + Illiterate) on Tuesday = (350+210-240) =320
Similarly on Friday = (320+400-320) = 400
Required ratio = (240+320): (320+400) = 7: 9

Directions (31-35):
Number of employees in production, HR and finance together in company A=(60/100)*9000=5400
Number of employees in R&D (in A)=1300
Number of employees in marketing (in A) = 1440
Number of employees in accounts (in A) =860
The number of employees in Marketing was 20 % less than that of HR department.
So, 1440= (100-20) % of HR department
Number of employees in HR (in A) = 1440*(100/80)=1800
We have, Production+HR+Finance =5400
Production+1800+Finance=5400
Production+ Finance=3600
Let number of employees in finance be X.
Given that the number of employees in Production department was 25 % more than that of finance department.
So, the number of employees in Production in A=(125/100) X
Now equation (1) becomes,
(125/100)X + X = 3600
X=1600.
Number of employees in finance (in A) = 1600
Number of employees in production (in A) = (125/100)*1600=2000
Number of employees in marketing (in B)= 900
12% of total Number of employees in B= 900
Total Number of employees in B=(100/12)*900=7500
Given that, the number of employees in Marketing was 40 % less than that of HR department
So, 900=(100-40)% of Number of employees in HR (in B)
Number of employees in HR (in B) = 1500
Given that, the number of employees in production from company B was 10 % less than the same department from Company A.
So, Number of employees in Production (in B) = (100-10) % 0f 2000 = (90/100)*2000=1800
Number of employees in accounts (in B) =500
Also given that, the total Number of employees in finance and R&D together were double the total Number of employees in Marketing and accounts together
So, (Finance + R&D (in B) =2 * (Marketing + accounts)(in B)
(Finance + Finance) (in B) =2*(900+500) since, finance=R&D
2*Finance=2*1400
Number of employees in Finance (in B)= 1400
Number of employees in R&D (in B)= 1400

<table>
<thead>
<tr>
<th>Subject</th>
<th>Company A (9000)</th>
<th>Company B (7500)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D</td>
<td>1300</td>
<td>1400</td>
</tr>
<tr>
<td>Marketing</td>
<td>1440</td>
<td>900</td>
</tr>
<tr>
<td>Accounts</td>
<td>860</td>
<td>500</td>
</tr>
<tr>
<td>Production</td>
<td>2000</td>
<td>1800</td>
</tr>
<tr>
<td>HR</td>
<td>1800</td>
<td>1500</td>
</tr>
<tr>
<td>Finance</td>
<td>1600</td>
<td>1400</td>
</tr>
</tbody>
</table>

31. Answer: E
Total Number of employees in Marketing and accounts together (in A) =1440+860=2300
Total Number of employees in Marketing and accounts together (in B) =900+500=1400

*Click Here for IBPS PO Mains 2018 Quality Mocks* | *Click Here for IBPS Clerk 2018 Quality Mocks*

Follow us: Telegram, Facebook, Twitter, Instagram, G+
Required difference = 2300 – 1400 = 900

32. Answer: A
The number of female R&D employee in Company A = \((3/4 \times 1300)\) = 975
The number of female R&D employee in company B = 975 - 175 = 800
The number of male R&D employees in company B = 1400 - 800 = 600

33. Answer: D
Total number of employees in finance and production together in A = 1600 + 2000 = 3600
Total number of employees in finance and production together in B = 1400 + 1800 = 3200
Required ratio = 3600:3200 = 9:8

34. Answer: B
Number of HR employees in Company B = 1500
Number of HR employees in Company A = 1800
Required percentage = \(\frac{(1800 - 1500) \times 100}{1800}\) = \(\frac{50}{3}\) %

35. Answer: B
Total number of employees in Company A = 9000
Total number of employees in Company B = 7500
Required percentage = \(\frac{9000 \times 100}{7500}\) = 120%

Directions (36-40):
36. Answer: C
Total number of engineering student in college A = (100 - 35) % of 1500 = \((65/100) \times 1500\) = 975
Given that the civil engineering students are 50% more than the mechanical engineering students.
Let x be the number of mechanical engineering students in college A.
Then number of civil engineering students in college A = x + 50% of x = 150% of x
So, \(x + (\frac{150}{100})x = 975\)
\(250\% \times x = 975\)
x = 390
So, the no of mechanical engineering students = 390
The number of civil engineering students = 585
Given that the ratio of boys and girls in college A for civil engineering students = 4:1
So, the difference of boys and girls in mechanical students = \((3/5) \times 585\) = 351

37. Answer: D
Given that, the total engineering student in college E = 525
Let the number of mechanical engineering students in college E be X.
Then the number of civil engineering student in college E = X - 12 \(\frac{1}{2}\) % of X = \(87 \frac{1}{2}\) % of X
Therefore, \(X + 87 \frac{1}{2}\) % of X = 525
\(187 \frac{1}{2}\) % of X = 525
X = 280
So, the number of mechanical engineering students in college E = 280
And the number of civil engineering students in college E = 525 - 280 = 245
The number of engineering student in college D = 735
The number of civil engineering in college D = (3/5) * 735 = 441
Required ratio = 441:247

38. Answer: D
Number of arts student in college A = (35/100) * 1500 = 525
Number of arts student in college B = 525 + 375 = 900
Let the total number of students in college B be X.
We know that, there are 40% of students in college B are arts.
So, (40/100) * X = 900
X = 2250
(i.e) Total number of students in college B = 2250
Required percent = [(2250 - 2100) / 2100] * 100 = 7 1/7%

39. Answer: D
Given that, total student in college C = 1380 and total arts student in college C = total engineering students in college C.
So, total arts student + total engineering student = 1380
Total arts student + total arts student = 1380
Therefore, total arts student = 690
Number of arts boys in college C = (5/6) * 690 = 575
If 20% of boys are transferred to college E, then the total students in college E = 1750 + (20/100) * 575 = 1865

40. Answer: A
Total students in X = [(2/5) * (35/100) * 1500] + [(40/100) * 2100]
= 210 + 840
= 1050

Directions (41-45):
41. Answer: C
Let Anand and Abinav can do 3x and 2x unit of work 1 in one hour respectively.
So, total work 1 done by both = (3x + 2x) * 4
= 20x
Anand alone will complete work 1 = 20x / 3x = 20/3 hours
Abinav alone will complete work 1 = 20x / 2x = 10 hours
Ratio of efficiency of Anand and Ajay = 5: 3
Ratio of time taken by Anand and Ajay = 3: 5
Ajay alone will complete work 1 = 20 / (3 * 3) * 5 hours
= 100 / 9 hours
Let total time taken in completing work 1 is y
So, 2 / (20/3) + (y - 2) / 10 + (y - 2) / (100/9) = 1
(y - 2) / 10 + 9(y - 2) / 100 = 7 / 10
10\(y - 20 + 9y - 18 = 70\)
\(y = 108/19\) hours

42. Answer: B
Part of work 2 done by Abinav on Jan 3 in 7 hours = \(7/14 = 1/2\)
This part of work done by 4 women in 5 hours
So whole work will be completed by 4 women in = 10 hours
One woman will complete it in = 40 hours 3 children will complete it in = \(40 \times 5/3 \times 3 = 200/9\) hours

43. Answer: B
Ratio of efficiency Anand and Abinav on Jan 2 = 3: 2
Let Anand and Abinav does 3\(x\) and 2\(x\) work in one hour
And Abinav completes work 2 in 9 hours
So, total work = 9 \(\times 2x = 18x\)
Anand will complete work 2 in \(18x/3x\) = 6 hours
So, \(m = 6\)
Similarly \(n = 10 \times 4x/5x = 8\)
Total x and y will complete the work in = \((8 - 6)(8+6)/(8 - 6)+(8+6)\)
=28/16 = 7/4 hours

44. Answer: B
Let Anand and Abinav can do 3\(x\) and 2\(x\) work in one hour on Jan 1
Then 80\% of total work 1 = \(4/5(3x+2x)\times3 = 12x\)
In 4 hours 10\(x\) work 1 is completed working alternatively and remaining 2\(x\) is complete by Anand on 5th hour
So total time = \((4+ 2x/3x)\) hours = 14/3 hours
Ratio of efficiency on Jan 5 is 5: 4
Ratio of time taken to complete work will be 4: 5
But Abinav completes work 2 in 10 hours on Jan 5
So, Anand will complete work 2 in 8 hours on Jan 5
Together they will complete work 2 in = \(8 \times 10/18 = 40/9\) hours
Required percentage = \((14/3 - 40/9)/(40/9)\times100 =((42-40)/9)/(40/9)\times100 = 2/40 \times 100 = 5\%\)

45. Answer: A
Let Ajay complete work 2 in x hours
According to question, \(2/10 + 2/x = 4/5\)
\(2/x = 4/5 - 1/5\)
\(2/x = 3/5\)
\(x = 10/3\)
Time taken by Abinav to finish work 1 on Jan 5 = \((5+4)*8/4\)
18 hours
Required percentage = \(10/(3 \times 18) \times 100 = 500/27\%\)

Directions (46–50):
Click Here for IBPS PO Mains 2018 Quality Mocks | Click Here for IBPS Clerk 2018 Quality Mocks
Follow us: Telegram, Facebook, Twitter, Instagram, G+
46. Answer: B
Part of the tank filled by pipe A in one minute = 1/12
Part of the tank filled by pipe B in one minute = 1/15
Time taken by pipe F to fill the tank = 4/3 x 12 = 16 minutes
Part of the tank filled by pipe F in one minute = 1/16
Time taken by pipe G to fill the tank = 2/3 x 15 = 10 minutes
Part of the tank filled by pipe G in one minute = 1/10
Part of the tank emptied by pipe Q in one minute = 1/18
Let required time = t minutes
According to the question
4/15 + 4/16 + 2/16 – 2/18 + t/10 = 1
=> t/10 = 1 – 4/15 – ¼ - 1/8 + 1/9
=> t/10 = (360 – 96 – 90 – 45 + 40)/360
=> t/10 = 169/360
=> t = 169/360 x 10
=> t = 169/36 minutes

47. Answer: C
Part of the tank filled by pipe A in one minute = 1/12
Part of the tank filled by pipe K in one minute = 2/12 = 1/6
Part of the tank filled by pipe C in one minute = 1/10
Part of the tank emptied by pipe S in one minute = 1/24
Part of the tank emptied by pipe L in one minute = 1.5/24 = 1/16
Part of the tank emptied by pipe R in one minute = 1/16
Part of the tank filled by pipe C and pipe K in 3 minutes = 3/10 + 3/16
= (24 + 15)/80
= 39/80
Let the required time taken = t minutes
t/16 + t/16 = 39/80
=> 2t/16 = 39/80
=> t = 39/80 x 16/2
=> t = 39/10 minutes

48. Answer: C
Time taken by pipe I to fill the tank = 5/4 x 8 = 10 minutes
Part of the tank filled by pipe I in one minute = 1/10
Time taken by pipe M to fill the tank = 10 x 120/100 = 12 minutes
Part of the tank filled by pipe M in one minute = 1/12
Time taken by pipe J to fill the tank = 10/9 x 18 = 20 minutes
Part of the tank filled by pipe J in one minute = 1/20
Part of the tank filled by pipe N in one minute = 2/20 = 1/10
Part of the tank filled by pipe D in one minute = 1/8
Part of the tank filled by pipe E in one minute = 1/18
Let the time taken by pipe M and pipe N to fill the tank = t minutes
And the time taken by pipe D and pipe E to fill the tank = k minutes
\[ \frac{t}{12} + \frac{t}{10} = 1 \]
\[ \Rightarrow \frac{5t + 6t}{60} = 1 \]
\[ \Rightarrow \frac{11t}{60} = 1 \]
\[ \Rightarrow t = \frac{60}{11} \text{ minutes} \]

And
\[ \frac{k}{8} + \frac{k}{18} = 1 \]
\[ \Rightarrow \frac{9k + 4k}{72} = 1 \]
\[ \Rightarrow k = \frac{72}{13} \text{ minutes} \]

Required percentage = \( \frac{\frac{60}{11}}{\frac{72}{13}} \times 100 \)
\[ = \frac{60}{11} \times \frac{13}{72} \times 100 \]
\[ = 98.48\% \]

49. Answer: B
Part of the tank filled by pipe B in one minute = \( \frac{1}{15} \)
Time taken by pipe G to fill the tank = \( \frac{2}{3} \times 15 = 10 \) minutes
Part of the tank filled by pipe G in one minute = \( \frac{1}{10} \)
Part of the tank emptied by pipe P in one minute = \( \frac{1}{20} \)
Part of the tank filled by pipe E in one minute = \( \frac{1}{18} \)
Time taken by pipe H to fill the tank = \( \frac{6}{5} \times 10 = 12 \) minutes
Part of the tank filled by pipe H in one minute = \( \frac{1}{12} \)
Part of the tank emptied by pipe S in one minute = \( \frac{1}{24} \)

Let the time taken by pipe B, pipe G and pipe P together to fill the tank = t minutes
And the time taken by pipe E, pipe H and pipe S together to fill the tank = k minutes
\[ \frac{t}{15} + \frac{t}{10} - \frac{t}{20} = 1 \]
\[ \Rightarrow \frac{4t + 6t - 3t}{60} = 1 \]
\[ \Rightarrow \frac{7t}{60} = 1 \]
\[ \Rightarrow t = \frac{60}{7} \text{ minutes} \]

And
\[ \frac{k}{18} + \frac{k}{12} - \frac{k}{24} = 1 \]
\[ \Rightarrow \frac{4k + 6k - 3k}{72} = 1 \]
\[ \Rightarrow \frac{7k}{72} = 1 \]
\[ \Rightarrow k = \frac{72}{7} \text{ minutes} \]

Required ratio = \( \frac{60}{7} : \frac{72}{7} = 5:6 \)

50. Answer: B
Part of the tank filled by pipe A in one minute = \( \frac{1}{12} \)
Part of the tank filled by pipe C in one minute = \( \frac{1}{10} \)
Part of the tank filled by pipe E in one minute = \( \frac{1}{18} \)
Part of the tank emptied by pipe P in one minute = \( \frac{1}{20} \)
Part of the tank emptied by pipe S in one minute = \( \frac{1}{24} \)
Time taken by pipe G to fill the tank = \( \frac{2}{3} \times 15 = 10 \) minutes
Part of the tank filled by pipe G in one minute = \( \frac{1}{10} \)
Time taken by pipe J to fill the tank = \( \frac{10}{9} \times 18 = 20 \) minutes

Click Here for IBPS PO Mains 2018 Quality Mocks | Click Here for IBPS Clerk 2018 Quality Mocks

Follow us: Telegram, Facebook, Twitter, Instagram, G+
Part of the tank filled by pipe J in one minute = \(\frac{1}{20}\)

Let the required time taken = \(t\) minutes

\[
\frac{4}{12} + \frac{4}{10} + \frac{4}{18} - \frac{2}{20} - \frac{2}{24} + \frac{t}{10} + \frac{t}{20} = 1
\]

\[
\Rightarrow \frac{1}{3} + \frac{2}{5} + \frac{2}{9} - \frac{1}{10} - \frac{1}{12} + (\frac{2t + t}{20}) = 1
\]

\[
\Rightarrow \frac{139}{180} + \frac{3t}{20} = 1
\]

\[
\Rightarrow 3t/20 = 1 - \frac{139}{180}
\]

\[
\Rightarrow 3t/20 = \frac{180 - 139}{180}
\]

\[
\Rightarrow 3t/20 = \frac{41}{180}
\]

\[
\Rightarrow t = \frac{41}{180} \times \frac{20}{3}
\]

\[
\Rightarrow t = \frac{41}{27} \text{ days}
\]