

## Solutions

1. Ans. B.

S likes white colour

Person	Color	Country	Gender
P	Red	France	M
Q	Blue	India	F
R	Green	England	F
S	White	Russia	F
T	Yellow	Pakistan	M
U	Black	Japan	M
V	Pink	China	M

2. Ans. A.

R- Green - England - Female combinations is true

Person	Color	Country	Gender
P	Red	France	M
Q	Blue	India	F
R	Green	England	F
S	White	Russia	F
T	Yellow	Pakistan	M
U	Black	Japan	M
V	Pink	China	M

3. Ans. C.

R S Q groups has only female members

Person	Color	Country	Gender
P	Red	France	M
Q	Blue	India	F
R	Green	England	F
S	White	Russia	F
T	Yellow	Pakistan	M
U	Black	Japan	M
V	Pink	China	M

4. Ans. D.

Person	Color	Country	Gender
P	Red	France	M
Q	Blue	India	F
R	Green	England	F
S	White	Russia	F
T	Yellow	Pakistan	M
U	Black	Japan	M
V	Pink	China	M

5. Ans. B.

T belongs from Pakistan

Person	Color	Country	Gender
P	Red	France	M
Q	Blue	India	F
R	Green	England	F
S	White	Russia	F
T	Yellow	Pakistan	M
U	Black	Japan	M
V	Pink	China	M

6. Ans. C.

B (Option C is Correct)

Detail:

G born on one of the months after July but before September.

..... January

..... March

..... May

..... July

.....G..... August

..... October

..... December

C is not born on March and January. Two persons born between C and E. C born before E. F is not born before C.

Two Possibilities are there:-

Possibility 1:-

..... January

..... March

.....C..... May

..... July

.....G..... August

.....E..... October

..... December

Possibility 2:-

..... January

..... March

..... May

.....C..... July

.....G..... August

.....F..... October

.....E..... December

Only four members are born between A and D. A born before D.

.....B..... January (Possibility 1)

.....A..... March

.....C..... May

.....F..... July

.....G..... August

.....E..... October



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ATTEMPT NOW

.....D..... December  
Possibility 2 does not follow the above condition.

- .....B..... January
- .....A..... March
- .....C..... May
- .....F..... July
- .....G..... August
- .....E..... October
- .....D..... December **(Final Arrangement)**

7. Ans. A.  
Only D (Option A is Correct)  
Detail:

G born on one of the months after July but before September.

- ..... January
- ..... March
- ..... May
- ..... July
- .....G..... August
- ..... October
- ..... December

C is not born on March and January. Two persons born between C and E. C born before E. F is not born before C.

Two Possibilities are there:-

Possibility 1:-

- ..... January
- ..... March
- .....C..... May
- ..... July
- .....G..... August
- .....E..... October
- ..... December

Possibility 2:-

- ..... January
- ..... March
- ..... May
- .....C..... July
- .....G..... August
- .....F..... October
- .....E..... December

Only four members are born between A and D. A born before D.

- .....B..... January (Possibility 1)
- .....A..... March
- .....C..... May
- .....F..... July
- .....G..... August
- .....E..... October
- .....D..... December

Possibility 2 does not follow the above condition.

- .....B..... January
- .....A..... March
- .....C..... May
- .....F..... July
- .....G..... August
- .....E..... October
- .....D..... December **(Final Arrangement)**

8. Ans. C.  
E-March (Option C is Correct)  
Detail:

G born on one of the months after July but before September.

- ..... January
- ..... March
- ..... May
- ..... July
- .....G..... August
- ..... October
- ..... December

C is not born on March and January. Two persons born between C and E. C born before E. F is not born before C.

Two Possibilities are there:-

Possibility 1:-

- ..... January
- ..... March
- .....C..... May
- ..... July
- .....G..... August
- .....E..... October
- ..... December

Possibility 2:-

- ..... January
- ..... March
- ..... May
- .....C..... July
- .....G..... August
- .....F..... October
- .....E..... December

Only four members are born between A and D. A born before D.

- .....B..... January (Possibility 1)
- .....A..... March
- .....C..... May
- .....F..... July
- .....G..... August
- .....E..... October
- .....D..... December

Possibility 2 does not follow the above condition.

- .....B..... January
- .....A..... March
- .....C..... May



.....F..... July  
 .....G..... August  
 .....E..... October  
 .....D..... December **(Final Arrangement)**

9. Ans. B.  
 F (Option B is Correct)  
 Detail:  
 G born on one of the months after July but before September.  
 ..... January  
 ..... March  
 ..... May  
 ..... July  
 .....G..... August  
 ..... October  
 ..... December  
 C is not born on March and January. Two persons born between C and E. C born before E. F is not born before C.  
 Two Possibilities are there:-  
 Possibility 1:-  
 ..... January  
 ..... March  
 .....C..... May  
 ..... July  
 .....G..... August  
 .....E..... October  
 ..... December  
 Possibility 2:-  
 ..... January  
 ..... March  
 ..... May  
 .....C..... July  
 .....G..... August  
 .....F..... October  
 .....E..... December  
 Only four members are born between A and D. A born before D.  
 .....B..... January (Possibility 1)  
 .....A..... March  
 .....C..... May  
 .....F..... July  
 .....G..... August  
 .....E..... October  
 .....D..... December  
 Possibility 2 does not follow the above condition.  
 .....B..... January  
 .....A..... March  
 .....C..... May  
 .....F..... July  
 .....G..... August  
 .....E..... October

.....D..... December **(Final Arrangement)**

10. Ans. D.  
 B (Option D is Correct)  
 Detail:  
 G born on one of the months after July but before September.  
 ..... January  
 ..... March  
 ..... May  
 ..... July  
 .....G..... August  
 ..... October  
 ..... December  
 C is not born on March and January. Two persons born between C and E. C born before E. F is not born before C.  
 Two Possibilities are there:-  
 Possibility 1:-  
 ..... January  
 ..... March  
 .....C..... May  
 ..... July  
 .....G..... August  
 .....E..... October  
 ..... December  
 Possibility 2:-  
 ..... January  
 ..... March  
 ..... May  
 .....C..... July  
 .....G..... August  
 .....F..... October  
 .....E..... December  
 Only four members are born between A and D. A born before D.  
 .....B..... January (Possibility 1)  
 .....A..... March  
 .....C..... May  
 .....F..... July  
 .....G..... August  
 .....E..... October  
 .....D..... December  
 Possibility 2 does not follow the above condition.  
 .....B..... January  
 .....A..... March  
 .....C..... May  
 .....F..... July  
 .....G..... August  
 .....E..... October  
 .....D..... December **(Final Arrangement)**



11. Ans. C.

The highest roll number belongs to the student who is the head of the class on Wednesday.

Step 1: The head of the class on Wednesday is Student D and on Saturday is B. The student whose roll number is 20 becomes the head of the class on Thursday.

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday		20
Friday		
Saturday	B	

Step 2: Student C becomes the head of the class just after student A. The student with roll number 24 is the next student to become the head of the class after student C. Here we can have two possibilities,

Days	Students	Roll Number
Monday	A	
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	

table 1

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday	A	20
Friday	C	
Saturday	B	24

table 2

Step 3: The head of the class on Monday is neither Student E nor F. So table 2 possibility is cancelled. And now we shall proceed with table 1 possibility.

Step 4: The difference between the roll number of the head of the class on the first day of the week and last day of the week is 1.

Days	Students	Roll Number
Monday	A	17/18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	18/17

table 1

Step 5: The difference of roll number of student B and student F is 4. For this to be true, the student B must have the roll number 17 and F shall be the head of the class on

Friday with his roll number as 21 as shown in the table below.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday	F	21
Saturday	B	17

table 1

Finally filling the remaining places, we get that Student E becomes the head of the class on Thursday and the student C who is the head of the class on Tuesday has 23 roll number.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	23
Wednesday	D	24
Thursday	E	20
Friday	F	21
Saturday	B	17

Wednesday.

12. Ans. A.

The highest roll number belongs to the student who is the head of the class on Wednesday.

Step 1: The head of the class on Wednesday is Student D and on Saturday is B. The student whose roll number is 20 becomes the head of the class on Thursday.

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday		20
Friday		
Saturday	B	

Step 2: Student C becomes the head of the class just after student A. The student with roll number 24 is the next student to become the head of the class after student C. Here we can have two possibilities,



Days	Students	Roll Number
Monday	A	
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	

table 1

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday	A	20
Friday	C	
Saturday	B	24

table 2

Step 3: The head of the class on Monday is neither Student E nor F. So table 2 possibility is cancelled. And now we shall proceed with table 1 possibility.

Step 4: The difference between the roll number of the head of the class on the first day of the week and last day of the week is 1.

Days	Students	Roll Number
Monday	A	17/18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	18/17

table 1

Step 5: The difference of roll number of student B and student F is 4. For this to be true, the student B must have the roll number 17 and F shall be the head of the class on Friday with his roll number as 21 as shown in the table below.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday	F	21
Saturday	B	17

table 1

Finally filling the remaining places, we get that Student E becomes the head of the class on Thursday and the student C who is the head of the class on Tuesday has 23 roll number.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	23
Wednesday	D	24
Thursday	E	20
Friday	F	21
Saturday	B	17

13. Student E  
Ans. D.

The highest roll number belongs to the student who is the head of the class on Wednesday.

Step 1: The head of the class on Wednesday is Student D and on Saturday is B. The student whose roll number is 20 becomes the head of the class on Thursday.

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday		20
Friday		
Saturday	B	

Step 2: Student C becomes the head of the class just after student A. The student with roll number 24 is the next student to become the head of the class after student C. Here we can have two possibilities,

Days	Students	Roll Number
Monday	A	
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	

table 1

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday	A	20
Friday	C	
Saturday	B	24

table 2

Step 3: The head of the class on Monday is neither Student E nor F. So table 2 possibility is cancelled. And now we shall proceed with table 1 possibility.

Step 4: The difference between the roll number of the head of the class on the first day of the week and last day of the week is 1.



Days	Students	Roll Number
Monday	A	17/18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	18/17

table 1

Step 5: The difference of roll number of student B and student F is 4. For this to be true, the student B must have the roll number 17 and F shall be the head of the class on Friday with his roll number as 21 as shown in the table below.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday	F	21
Saturday	B	17

table 1

Finally filling the remaining places, we get that Student E becomes the head of the class on Thursday and the student C who is the head of the class on Tuesday has 23 roll number.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	23
Wednesday	D	24
Thursday	E	20
Friday	F	21
Saturday	B	17

38

14. Ans. B.

The highest roll number belongs to the student who is the head of the class on Wednesday.

Step 1: The head of the class on Wednesday is Student D and on Saturday is B. The student whose roll number is 20 becomes the head of the class on Thursday.

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday		20
Friday		
Saturday	B	

Step 2: Student C becomes the head of the class just after student A. The student with roll number 24 is the next student to become the head of the class after student C. Here we can have two possibilities,

Days	Students	Roll Number
Monday	A	
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	

table 1

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday	A	20
Friday	C	
Saturday	B	24

table 2

Step 3: The head of the class on Monday is neither Student E nor F. So table 2 possibility is cancelled. And now we shall proceed with table 1 possibility.

Step 4: The difference between the roll number of the head of the class on the first day of the week and last day of the week is 1.

Days	Students	Roll Number
Monday	A	17/18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	18/17

table 1

Step 5: The difference of roll number of student B and student F is 4. For this to be true, the student B must have the roll number 17 and F shall be the head of the class on Friday with his roll number as 21 as shown in the table below.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday	F	21
Saturday	B	17

table 1



Finally filling the remaining places, we get that Student E becomes the head of the class on Thursday and the student C who is the head of the class on Tuesday has 23 roll number.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	23
Wednesday	D	24
Thursday	E	20
Friday	F	21
Saturday	B	17

23

15. Ans. D.

The highest roll number belongs to the student who is the head of the class on Wednesday.

Step 1: The head of the class on Wednesday is Student D and on Saturday is B. The student whose roll number is 20 becomes the head of the class on Thursday.

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday		20
Friday		
Saturday	B	

Step 2: Student C becomes the head of the class just after student A. The student with roll number 24 is the next student to become the head of the class after student C. Here we can have two possibilities,

Days	Students	Roll Number
Monday	A	
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	

table 1

Days	Students	Roll Number
Monday		
Tuesday		
Wednesday	D	
Thursday	A	20
Friday	C	
Saturday	B	24

table 2

Step 3: The head of the class on Monday is neither Student E nor F. So table 2 possibility is cancelled. And now we shall proceed with table 1 possibility.

Step 4: The difference between the roll number of the head of the class on the first day of the week and last day of the week is 1.

Days	Students	Roll Number
Monday	A	17/18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday		
Saturday	B	18/17

table 1

Step 5: The difference of roll number of student B and student F is 4. For this to be true, the student B must have the roll number 17 and F shall be the head of the class on Friday with his roll number as 21 as shown in the table below.

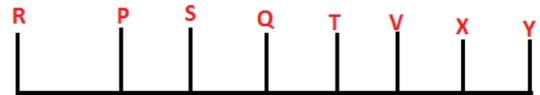
Days	Students	Roll Number
Monday	A	18
Tuesday	C	
Wednesday	D	24
Thursday		20
Friday	F	21
Saturday	B	17

table 1

Finally filling the remaining places, we get that Student E becomes the head of the class on Thursday and the student C who is the head of the class on Tuesday has 23 roll number.

Days	Students	Roll Number
Monday	A	18
Tuesday	C	23
Wednesday	D	24
Thursday	E	20
Friday	F	21
Saturday	B	17

16. Ans. C.

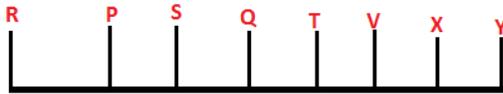


17. Ans. E.

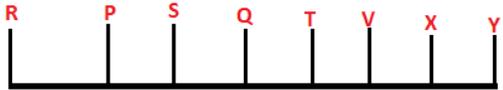


18. Ans. C.

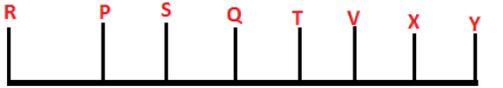




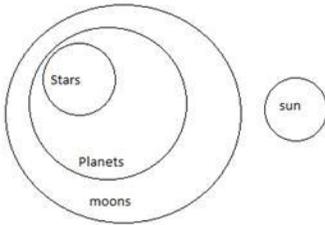
19. Ans. A.



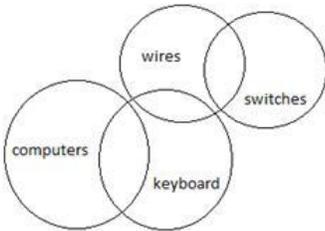
20. Ans. D.



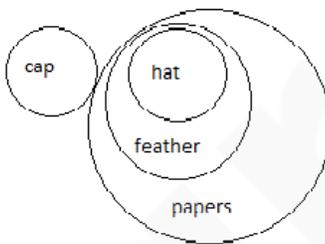
21. Ans. D.



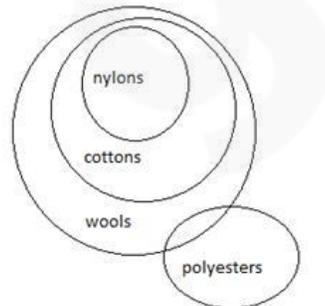
22. Ans. D.



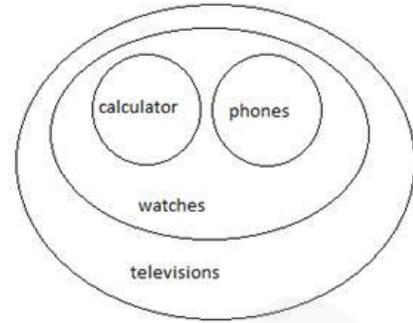
23. Ans. A.



24. Ans. B.



25. Ans. E.



26. Ans. C.

$P @ Q \$ M \# T$  means P is the husband of Q who is the mother of M who is the father of T i.e., P is the father of T's father i.e., P is T's paternal grandfather.

27. Ans. B.

R is the sister of H means R is the daughter of the father of H i.e., R is the daughter of the husband (say D) of the mother (say F) of H i.e.,  $R \% D @ F \$ H$ .

28. Ans. A.

$F @ D \% K \# H$  means F is the husband of D who is the daughter of K who is the father of H i.e., F is the husband of D who is the sister of H i.e., F is H's brother-in-law.

29. Ans. B.

H is the brother of N means N is the daughter of H's father and H is a male i.e., N is the daughter of the husband (say F) of the father (say D) of H and H is the father or husband of some other person (say R) i.e.,  $N \% F @ D \$ H \# R$  or  $N \% F @ D \$ H @ R$ .

30. Ans. C.

$Q > P > H > J, R$   
Thus Q is the tallest.  
Hence Option C is correct

31. Ans. A.

From the given conditions, we can conclude:  $B > A > C > D > E$  hence A and B are older than C.

32. Ans. A.

$P 1 \% T R A 5 \# D M 7 K \ll E G 2 8 \$ H 3 I 4 V U 6 F \circ 9 Z$   
 $K \ll E$  in this pair - E is a vowel. Hence.. In the above series, there is no consonant-symbol-consonant sequence.

33. Ans. B.

Consonant	Number	Vowel
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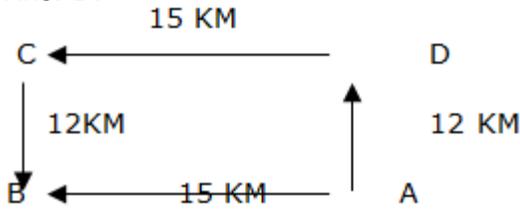
Arrangement - N 3 A



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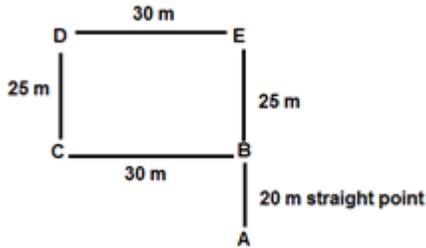
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34. Ans. D.



Hence, Option D is correct.

35. Ans. B.



36. Ans. C.

number of students in school B = 20% of 25000  
 Number of teachers in school A =  $(1/7) \times 14\%$  of 25000  
 Required ratio =  $20 : (1/7) \times 14 = 10 : 1$

37. Ans. C.

number of students in school A, B and C = 50% of 25000  
 Required fraction =  $1/2$  I.e half of the students are enrolled in class A, B and C together

38. Ans. A.

Average number of students in A and C =  $(14+16)\%$  of 25000 = 3750  
 Number of students in D = 8250  
 Required difference = 4500

39. Ans. D.

Number of students in B = 20% of 25000 = 5000  
 Number of students in D = 8250  
 After closure of school B, number of students in D =  $8250 + 1250 = 9500$   
 Required percentage =  $9500 \times 100 / 25000 = 38\%$

40. Ans. D.

Number of female students from school A, B and C = 50% of  $(14+20+16)\%$  of 25000 = 6250  
 Number of female students from school D =  $(1/3)$  of 33% of 25000 = 2750  
 Number of female students from school D =  $(9/17)$  of 17% of 25000 = 2250  
 Percentage of females =  $11250 \times 100 / 25000 = 45\%$

41. Ans. C.

From the line graph,

Number of shirts sold by A in 2008 = 3500  
 Given, the % of full sleeves shirts sold by store A in 2008 was 25%.

Number of full sleeves shirts sold by store A in 2008 = 25% of 3500 = 875

Number of shirts sold by A in 2008 = 3000  
 Given, the % of full sleeves shirts sold by store B in 2008 was 30%.

Number of full sleeves shirts sold by store B = 30% of 3000 = 900

Thus, number of full sleeves shirts sold by store A is less.

% by which the number of full sleeves shirts sold by A was less than the number of full sleeves sold by B  

$$= \frac{900 - 875}{900} \times 100\% = \frac{25}{9}\%$$

42. Ans. B.

From the line graph,

Total number of shirts sold by store B in 2009 = 4000

Given, manufacturing price of each shirt was Rs. 250, transportation cost was Rs. 35000.

Total cost price =  $250 \times 4000 + 35000 =$  Rs. 1035000

Given, selling price per shirt = Rs. 480  
 Total selling price =  $480 \times 4000 =$  Rs. 1920000

$$= \frac{1920000 - 1035000}{1035000} \times 100\%$$

% profit = 85.5%

% profit = 85.5%

43. Ans. E.

From the line graph,

Number of shirts sold by outlet A in 2006 = 4000

Number of shirts sold by outlet B in 2006 = 2500

Total number of shirts sold by outlets A and B together in 2006 = 6500

Number of shirts sold by outlet A in 2010 = 5000

Number of shirts sold by outlet B in 2010 = 3500

Total number of shirts sold by outlets A and B together in 2010 = 8500

Ratio of number of shirts sold by outlets A and B together in 2006 to 2010 =  $6500 / 8500 = 13 : 17$

None of the options match, answer is e).

44. Ans. D.

From the line graph,



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Total number of shirts sold by outlet A in 2009 = 4500  
 Total number of shirts sold by outlet A in 2010 = 5000  
 Given, selling price of shirts increased by 10% in 2010 from 2009.

Let the selling price of shirt in 2009 be 'a'.  
 Selling price of shirt in 2010 = a + 10% of a = 1.1a

Total earnings in 2009 = 4500a  
 Total earnings in 2010 = 5000 × 1.1a = 5500a

$$\% \text{ increase in earnings} = \frac{5500a - 4500a}{4500a} \times 100\% = \frac{200}{9}\% = 22\frac{2}{9}\%$$

45. Ans. A.  
 From the line graph,  
 Total number of shirts sold in 2007 by outlet B = 4500  
 Given, selling price of the three variants were in the order Variant I > Variant III > Variant II.  
 Thus in order to maximize profit, maximum number of shirts sold should be of Variant I.  
 Also, number of shirts which were sold by outlet B was in order Variant I > Variant II > Variant III.  
 Maximum number of shirts of any variant he could sell was 2000.  
 Number of Variant I shirts sold = 2000  
 Remaining number of shirts = 4500 - 2000 = 2500  
 In order to maximum profit, number of Variant III shirts should be just less than number of Variant II shirts  
 Thus number of variant II shirts = 1251 and number of variant III shirts = 1249

46. Ans. B.  
 A: B = 7: 8 :: 8: x (time)  
 7\*8: 8\*x = 7: 11  
 56/8x = 7/11  
 x = 11

47. Ans. B.  
 Let the present ages of the father and the son be F and S respectively. From the first condition, we have  
 F-3 = 4(S-3) + 2  
 $\Rightarrow F = 4S - 7$  --- (1)  
 From the second condition, we have  
 F + 6 = 3(S + 6) + 6  
 $\Rightarrow F = 3S + 18$  ---- (2)

Equating the value of F from (1) and (2) we get S = 25 .  
 Substituting the value of S in 1or (2) we get F = 93 .

As F + S = 118, after  $\frac{140-118}{2}$  years i.e., after 11 years the sum of their ages will be years 140 years.

48. Ans. B.  
 C. P. of car = 90/100 × 4,50,000 = Rs. 4,05,000  
 C. P. of Bike = 1/10 × 4,05,000 = Rs. 40,500  
 MP of bike \* 80/100 = 40,500  
 $\Rightarrow$  M.P. of Bike = Rs. 50,625  
 C.P. of car and Bike = 4,05,000 + 40,500 = 4,45,500  
 S.P. of car and Bike  
 = 130/100 × 4,45,500 = Rs. 5,79,150  
 S.P. of car = 5,79,150 - 110/100 × 40,500  
 = 5,79,150 - 44,550  
 = 5,34,600  
 Required Ratio = 50,625/5,34,600 = 25/2654

49. Ans. C.  
 By the replacement formula  
 Decreased amount = Original amount  $[1 - (\text{replacing amount} / \text{original amount})]^{no. \text{ of times}}$   
 (m)  
 Now, since the ratio of petrol and kerosene is 1701 and 27 it means initially there was (1701 + 27) = 1728 unit of kerosene and the decreased amount of kerosene is 27 unit.  
 Therefore, 27 = 1728[1 - (6/K)]<sup>3</sup> K = 8 litre.

50. Ans. D.  
 P can complete a task in 20 days.  
 The part of task done by P in 1 day = 1/20  
 The part of task done by P in 5 days = (1/20) × 5 = 1/4  
 So, the remaining part of task = 1 - 1/4 = 3/4  
 Then, Q completes the 3/4 part of the task in 12 days.  
 So, Q alone can complete the whole work in = 12 × (4/3) = 16 days.  
 (P + Q)'s 1 day's work = (1/20) + (1/16) = 9/80  
 $\therefore$  P and Q will together complete the task in =

$$80/9 \text{ days} = 8\frac{8}{9} \text{ days.}$$

51. Ans. A.  
 8x+5y=32 ----- (x7)  
 5x+7y=20 ----- (x5)



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$$\begin{array}{r} 56x+35y=224 \\ 25x+35y=100 \\ \hline - \quad - \quad - \\ \hline 31x \quad =124 \end{array}$$

$$x=124/31$$

$$x=4$$

Using equation  $5x+7y=20$

$$5(4)+7y=20$$

$$20+7y=20$$

$$7y=20-20$$

$$7y=0$$

$$y=0$$

$$x>y$$

52. Ans. E.

$$20x^2-108x+144=0$$

$$20x^2-60x-48x+144=0$$

$$20x(x-3)-48(x-3)=0$$

$$(x-3)(20x-48)=0$$

$$x-3=0 \text{ or } 20x-48=0$$

$$x=3 \text{ or } 20x=48$$

$$x=3 \text{ or } x=48/20=12/5=2.4$$

$$3y^2-16y+21=0$$

$$3y^2-9y-7y+21=0$$

$$3y(y-3)-7(y-3)=0$$

$$(y-3)(3y-7)=0$$

$$y-3=0 \text{ or } 3y-7=0$$

$$y=3 \text{ or } 3y=7$$

$$y=3 \text{ or } y=7/3=2.33$$

No relation can be established.

53. Ans. D.

$$10x^2-x-119=0$$

$$10x^2-35x+34x-119=0$$

$$5x(2x-7)+17(2x-7)=0$$

$$(2x-7)(5x+17)=0$$

$$(2x-7)=0 \text{ or } (5x+17)=0$$

$$x=7/2 \text{ or } x=-17/5$$

$$x=3.5 \text{ or } x=-3.4$$

$$2y^2-15y+28=0$$

$$2y^2-7y-8y+28=0$$

$$y(2y-7)-4(2y-7)=0$$

$$(2y-7)(y-4)=0$$

$$(2y-7)=0 \text{ or } (y-4)=0$$

$$y=7/2 \text{ or } y=4$$

$$y=3.5 \text{ or } y=4$$

$$x \leq y$$

54. Ans. E.

$$x^2-256=529-56$$

$$x^2-256=473$$

$$x^2=473+256$$

$$x^2=729$$

$$x= \pm 27$$

$$y^2-25y+156=0$$

$$y^2-13y-12y+156=0$$

$$y(y-13)-12(y-13)=0$$

$$(y-13)(y-12)=0$$

$$y-13=0 \text{ or } y-12=0$$

$$y=13 \text{ or } y=12$$

Cannot be determined

55. Ans. E.

$$6x^2-x-2=0$$

$$6x^2+3x-4x-2=0$$

$$3x(2x+1)-2(2x+1)=0$$

$$(2x+1)(3x-2)=0$$

$$x=-1/2 \text{ or } x=2/3$$

$$3y^2-4y-4=0$$

$$3y^2+2y-6y-4=0$$

$$y(3y+2)-2(3y+2)=0$$

$$(3y+2)(y-2)=0$$

$$y=-2/3 \text{ or } y=2$$

CND

56. Ans. A.

$$8 \times 1 + 1 = 9$$

$$9 \times 1.5 + 1.5 = 15$$

$$15 \times 2 + 2 = 32$$

$$32 \times 2.5 + 2.5 = 82.5$$

$$82.5 \times 3 + 3 = 250.5$$

57. Ans. A.

$$2 + 1^3 + 2 = 5$$

$$5 + 2^3 - 4 = 9$$

$$9 + 3^3 + 6 = 42$$

$$42 + 4^3 - 8 = 98$$

$$98 + 5^3 + 10 = 233$$

58. Ans. B.

$$100 \times 1 = 100$$

$$100 \times 0.5 = 50$$

$$50 \times 0.25 = 12.5$$

$$12.5 \times 0.125 = 1.5625$$

59. Ans. A.

$$12 \times 1.5 + 2 = 20$$

$$20 \times 1.5 + 4 = 34$$

$$34 \times 1.5 + 6 = 57$$

$$57 \times 1.5 + 8 = 93.5$$

60. Ans. D.

$$1023 - 36 = 987$$

$$987 - 72 = 915$$

$$915 - 108 = 807$$

$$807 - 144 = 663$$

61. Ans. E.

From the I statement

The side of the Q square is 30 cm but we do not know the side of P square

From II statement

We can calculate the side of the square P by the ratio of the diagonal given.



Hence the both statement are necessary to answer the question.

62. Ans. C.

From statement I:

In four years, sum doubles. So,

$$SI = P$$

$$SI = P * r * n / 100$$

$$P = P * r * 4 / 100$$

$$r = 100/4 = 25\%$$

time for interest to be 5 times of sum or sum to be 6 times:

$$5P = P * 25 * n / 100$$

$$n = 20 \text{ years}$$

From statement II:

$$P/5 = P * r * 5 / 100$$

$$r = 100/25 = 4\%$$

So for amount 6 times,  $SI = 5P$

$$5P = P * 4 * n / 100$$

N can be calculated

Hence, both the statements are alone sufficient to answer

63. Ans. B.

Question type: Yes/No. The question asks: "Is the product (a) (a + 1) (a + 2) divisible by 48?" You can think ahead of time that in order to be divisible by 48 this product must have the prime factors of 48:  $2^4 * 3$ . So the question is really: Does this product contain at least four 2s and one 3?

Given information in the question stem or diagram: "a is a positive integer." Since a is a positive integer the rule that "in any three consecutive integers one of those integers will be a multiple of 3" applies. That means that before you even go to the statements you know that the product (a) (a + 1) (a + 2) will be a multiple of 3. The question then can be simplified even more from above because you know that the factor of 3 will be present. The simplified question is: Does this product have 24 as a factor? It is essential that you always leverage all given information in the question before moving to statements. Also note that this problem (as is true for most arithmetic problems) is best solved with your conceptual understanding of factors and divisibility. While you could prove sufficiency/insufficiency with number picking, it would be cumbersome and risky in this example.

Statement 1: a is even. If a is an even number, it means that a will contain at least one 2 as a factor. It also means that a + 2 will be even and that one of those two even

numbers will be a multiple of 4. For example, if  $x = 2$  then  $(x + 2) = 4$ . This means that you have at least 23 as a factor. However, this statement is not sufficient as it only guarantees three 2s in the product and not the required four 2s. Eliminate choices A and D.

Statement 2: If 4a is divisible by 32 then "a" must be divisible by 8. If a contains three 2's as factors then this information is sufficient as you know that (a + 2) will have to contain at least one 2 as well. This statement is sufficient to prove that the product will contain  $2^4 * 3$  and the correct answer is B.

64. Ans. C.

If we consider I and II alone we cannot find the speed of the train C so considering both I and II

$$\text{Speed of Train A} = S_b = 2.25 \times S_a = 2.25 \times 40 = 100 \text{ Km/hr}$$

In half an hour, Train B would have moved =  $60 * 1/2 = 30 \text{ Km}$  away from train C

Therefore, train C will have to cover 30 Km in relative speed to cross train B. So, time taken =  $30(S_c - 60)$

Similarly, train C will have to cover  $100 * 1/2 = 50 \text{ Km}$  in relative speed to cross train B. So, time taken =  $50(S_c - 100)$ .

Given the difference between these two times is 90 minutes. Therefore,

$$50(S_c - 100) - 30(S_c - 60) = 90/60.$$

By solving we will get the speed of third train. So I and II are required to solve the question.

65. Ans. D.

In the statement I we do not know the listed price of the mobile phone so we cannot find out the exact cost price of this item.

⇒ So option D is correct choice.

66. Ans. C.

Let, time taken by A to run 1 km = x seconds and time taken by B to run 1 km = y seconds

When A gives B a start of 40 meters,

A runs = 1000 meters

B runs =  $1000 - 40 = 960$  meters

According to problem,

$$\Rightarrow y \times 960 / 1000 - x = 20$$

$$\Rightarrow 96y - 100x = 2000$$

$$\Rightarrow 24y - 25x = 500$$

$$\Rightarrow 120y - 125x = 2500 \dots\dots (1)$$

When A gives B a start of 30 seconds,

B runs for = y sec.

A runs for = y - 30 sec.



According to problem,  
 $\Rightarrow 1000 - 1000 \times (y - 30)/x = 50$   
 $\Rightarrow 1000x - 1000y + 30000 = 50x$   
 $\Rightarrow 1000y - 950y = 30000$   
 $\Rightarrow 20y - 19x = 600$   
 $\Rightarrow 120y - 114x = 3600 \dots\dots\dots (2)$   
 From (2) - (1) we get,  
 $\Rightarrow 125x - 114x = 1100$   
 $\Rightarrow 11x = 1100$   
 $\Rightarrow x = 100$   
 $\therefore$  time taken by A to run 1 km = 100 sec.

**Alternate solution :**

Let speed of A be a and speed of B be b  
 According to problem:  
 When A gives B a lead of 40 m and still wins by 20 seconds  
 $960/b - 1000/a = 20s \dots\dots(1)$   
 When B wins by 50 m by taking 30 seconds more than A  
 $1000/b - 950/a = 30s \dots\dots(2)$   
 subtracting (2) from (1) we get  
 $40/b + 50/a = 10s \dots\dots(3)$   
 since its obvious that  $a > b$   
 by checking the options and finding speed of A we can eliminate options (a) and (b) as there we get the value of  $b > a$ . option (c) gives speed of A =  $1000/100 = 10\text{m/s}$ . This satisfies our equation (3) perfectly so is the correct answer.

**Alternatively (using hit and trial)**

one of the simplest solution to equation (3)  
 $40/b + 50/a = 10s$   
 would be  
 $5+5 = 10$   
 so  $40/b = 5$  and  $50/a = 5$   
 $\Rightarrow a=10 \text{ m/s}$   
 so time taken =  $1000/10 = 100$  seconds

67. Ans. D.

Let speed of current= $y$   
 Speed of boat B in upstream= $10-y$   
 Speed of boat A in downstream= $10-y+y=10$   
 ATQ  
 $40/10 - y - 20/10=3$   
 $Y=2$   
 So speed of boat A in still water=  
 $(10-2)=8\text{km/hr}$

68. Ans. A.

Let Mr Ram monthly income be Rs. 100  
 Then, money spent on household expenditure  
 $= 100 \times 20/100 = \text{Rs. } 20$   
 Remaining amount =  $100 - 20 = \text{Rs. } 80$   
 Money spent on children's education =

$$80 \times \frac{25}{100} = \text{Rs } 20$$

Money spent on transport =  $80 \times 15/100 = \text{Rs. } 12$

Money spent on medicine =  $80 \times 15/100 = \text{Rs. } 12$

Money spent on entertainment =  $80 \times 10/100 = \text{Rs. } 8$

Last remaining amount =  $100 - (20 + 20 + 12 + 12 + 8)$   
 $= 100 - 72 = \text{Rs. } 28$

Now, Rs. 28 is left, when total income is Rs. 100

Rs. 1 is left, when total income =  $100/28$

Rs. 5600 is left, when total income  
 $= 100/28 \times 5600$   
 $= \text{Rs. } 20000$

69. Ans. B.

Probability of choosing one box =  $1/2$

Probability of yellow ball from 1st box =  $1/2 * 4c1/12c1 = 4/24 = 1/6$

Probability of yellow ball from 2nd box =  $1/2 * 5c1/10c1 = 5/20 = 1/4$

Required probability =  $1/4 + 1/6 = 5/12$

70. Ans. C.

We know that difference between SI and CI for two years is the interest on one year simple interest. So simple interest for one year will be 350 from below

For two years,

$$CI - SI = 70$$

SI for two years will be  $770 - 70 = 700$

SI for one year will be 350 rupees.

$$350 * r/100 = 70$$

$$r = 7000/350 = 20\%$$

we know that  $PTR/100 = 700$

$$P * 2 * 20 / 100 = 700$$

$$P = 1750$$

71. Ans. E.

As per the passage, though there problems that may occur due to late payment has been mentioned in the passage, there is no specific mention given in the context related to the impact of late payment on the NREGS workers.

Hence, option E is the correct response.

72. Ans. D.

Among the above the only factor that has not been responsible for untimely payment of NREGS workers is the draught conditions prevalent in the country. Refer these lines from first stanza of the passage "It is often argued by officials that the main reason for



the delay is the inability of banks and post offices to handle mass payments of NREGS wages."

Hence, option D is the correct answer.

73. Ans. B.

It has been mentioned in the context of the passage that the outcome of disbursing NREGS wages through banks has been an increased work load for local government officials. Refer these lines from stanza 1 of the passage "In reality, compensation is received in only a few isolated instances. It is often argued by officials that the main reason for the delay is the inability of banks and post offices to handle mass payments of NREGS wages. Though there is a grain of truth in this, as a diagnosis it is misleading. The 'jam' in the banking system has been the result of the hasty switch to bank payments imposed by the Central Government against the recommendation of the Central Employment Guarantee Council which advocated a gradual transition starting with villages relatively close in the nearest bank."

74. Ans. A.

There is no specific mention of the consequences of the late payment of the wages. Thus, option A is the correct answer.

75. Ans. C.

It is clearly mentioned in the passage that the delay in wage payments is an attempt to derail the NREGS by vested interests. Thus, option D is the correct answer.

76. Ans. B.

The given context hasn't talked about the workers' reluctance to open bank accounts because of the branches are not conveniently located. Moreover, there is nothing like a problem of drought that has been mentioned in the passage.

Statement C is the only statement that has been clearly stated in the passage. Refer lines from stanza 1 "The 'jam' in the banking system has been the result of the hasty switch to bank payments imposed by the Central Government against the recommendation of the Central Employment Guarantee Council which advocated a gradual transition starting with villages relatively close in the nearest bank. However, delays are not confined solely to the banking system."

Thus, Option A & B is not true in the context of passage.

77. Ans. C.

It can be clearly made out from the passage that workers have no means of obtaining redressal for untimely wage payments. The whole theme of the passage revolves around the workers' grievance of having no means to obtain timely wages.

Thus, option C is the correct response.

78. Ans. E.

There is no error in the statement, so the correct response is option E. Here, the given bold part begins with a verb which is preceded by a noun and grammatically correct.

79. Ans. C.

The verb form 'earning' is preceded by 'to' and grammatically, the rule is that the first form of the verb is used along with 'to'. So, 'earn a decent living' is the most appropriate replacement for the boldened part.

Hence, option C is the correct answer.

80. Ans. A.

To make the context grammatically and contextually correct, option A should be the answer. The statement looks correct at the first glance but looking closely one can observe that the statement of the commissioner is basically a jibe at the ability to produce quality steel. Using 'ever' gives the statement a more contextually accurate sense. Hence, option A is the correct answer.

81. Ans. D.

It should be 'to the notice of' instead of the phrase mentioned in the question statement. 'Bringing to the notice of someone' means to tell someone about something.

Thus, option D is the correct response.

82. Ans. A.

It should be 'Increased investment in' as the latter part of the statement uses the verb in infinitive form i.e. (to+verb) and thus past participle form(+ed) needs to be used instead of gerund form (+ing).

Hence, option A is the correct answer.

83. Ans. B.

'So that to catch' should be replaced by 'So as to catch' to make the sentence grammatically correct. 'So as to to catch' means in order to catch something/someone.

Hence, option B is the correct answer.

84. Ans. C.

The first sentence conveys the idea that literature is a huge storehouse of wit and irony. The second sentence tells us that the



youths are all that it is needed to give strength to life. Here too, the word that should fit in is 'depository'.

Among all the words given in the option, the word 'depository' fits best in both the sentences, 'depository' means collection of something in a proper way. 'Godown' is very informal that is particularly used for shops. 'Collection' means a collection of things in any random way. 'Heap' refers to a collection of not so useful things. 'Assemble' means to gather together for a common cause or fit together the separate components or parts.

Hence, option C is the correct response.

85. Ans. C.

The first sentence implies that the wife's irritable behaviour majorly crossed the husband but the same aspect came in handy. Since the sentence is talking about a behavioural aspect that made the husband irritated, domineering is the best fit alternative which means bossy.

The meaning of the words is as follows:

Berserk means Crazy or uncontrollable

Bombast means Pretentious, wordy speech or writing

Palliative means Curative

Tortuous means Excessively lengthy and complex

Thus, option C is the word that fits in both the sentences.

86. Ans. B.

The meaning of the words is as follows:

Despondent means in low spirits from loss of hope or courage.

Frivolous means not having any serious purpose or value.

Zealot means a person who is fanatical and uncompromising in pursuit of their religious, political or other ideals.

Garble means to mix up.

Haggard means looking exhausted and unwell, especially from fatigue, worry or suffering.

In sentence A, it can be clearly inferred that despite the financial condition of Rina, she spends a lot on the useless or purposeless purchases. In sentence B, 'frivolous' preceded with 'silly' reflects a contextual sense.

Thus, option B fits in both the sentences.

87. Ans. B.

The first sentence conveys the idea that Tom must review the terms of the contract to align with the terms mentioned in the contract.

The second sentence is talking about the fact that the president's wrongdoing shocked everyone expected him/her to be well versed with the code of conduct of that particular aspect.

The meaning of the words is as follows:

Serendipity means the occurrence and development of events by chance in a happy or beneficial way.

Propriety means conformity to conventionally accepted standards of behaviour or morals.

Zenith means Highest point

Strut means a stiff, erect, and apparently arrogant or conceited gait

Usury means the action or practice of lending money at unreasonably high rates of interest.

Thus option B fits in both the sentences.

88. Ans. D.

Both the sentences show the vulnerable side of the situations. The first sentence talks about a report which says that we should take direct measure to improve the living conditions of the poor and vulnerable. The second sentence talks about an anonymous situation which is rising but its solution is beyond our ability. The sentence talks about the ability to improve the catastrophe so, the word in the blanks should mean make something bad or unsatisfactory better. Therefore, option D 'Ameliorate' is apt.

Tarnish means to lose or cause to lose lustre. Therefore, it is opposite of the word we need.

Control means to exercise restraint or direction over; dominate; command. Therefore, there is a difference between to improve and control the situation.

Vitiate means to spoil or impair the quality or efficiency of something. Therefore, it is opposite of the word we need.

Aggravate means to make a problem, injury, or offence worse or more serious. Therefore, it is opposite of word we need.

Hence, option D is the correct answer.

89. Ans. B.

Here, 'obviously' (Adverb) is used in the context, but as per the demand of the context or to make it grammatically and contextually correct, 'obvious' (Adjective) should be used.

Hence, option B is the correct answer.



90. Ans. D.  
He was badly shaken by the news of her **death**. 'dead' is an adjective which has been used in the sentence but the context given calls for the use of a noun. Hence, **death (Noun)** should be used.  
Thus, option D is correct.
91. Ans. A.  
'To save his own skin' is correct idiomatic expression which means to protect yourself from danger or difficulty, without trying to help other people. Thus, 'skull' should be replaced with 'skin'.  
Hence, option A is correct.
92. Ans. B.  
According to the grammatical rule: Subject + have/has + V<sub>3</sub> + object  
Hence, **refrained** (V<sub>3</sub>) should be used.  
Thus, option B is correct.
93. Ans. A.  
The correct spelling is : goalkeeper's  
Hence, option A is correct.
94. Ans. C.  
Here 'absence' (noun) should be used instead of 'absents' (adjective) to make the context of sentence appropriate.  
Hence, option C is the correct answer.
95. Ans. D.  
'Owning' is incorrect in the context of the statement and does not give any proper meaning as well. It should be replaced with 'owing' which would mean 'because of'. Thus, option D is the correct answer.
96. Ans. A.  
The paragraph describes an event.  
Statement S is the continuation of the first part. Statement Q is the action after the loud noise and cry for help was noticed by the viewers. Statement P follows statement Q as it states the cause of the scenario mentioned. Statement R follows P as it's about the action undertaken by viewers in the situation by rescuing them and lastly informing hospital and police authorities.  
Hence, the correct sequence is SQPR
97. Ans. C.  
Sentence Q should be at the beginning since it gives out an average rate of the meteorite

shower. Then comes sentence R which explains the peak and the timing of the meteorite shower. Sentence P comes in at third raising some concern with the viewing of meteor showers since the moon will be present. At the end comes sentence S which is a direct quote from a scientist.  
Hence, the correct sequence is QRPS.

98. Ans. E.  
Statement (1) broaches the subject on which the paragraph is based. Statement (Q) carries forward what is stated in (1). (Persuading children to eat vegetables is difficult because in an age of plenty people have the luxury of eating what they like). From statement (1) and (Q) which are general statements, we move on to (S) which is specific despite the libertarian ethos in America what the citizens eat and how much exercise they take is a cause for concern in America. Hence (S) is a continuation of (1) and (Q). (R) follows (S). 'It' in (R) refers to the concern expressed in (R). Statement (P) is conclusive in nature.  
Hence, QSRP is the correct answer.
99. Ans. D.  
In the above paragraph, the starting sentence is already defined. The sentence sequence 1SP is using **a double contrast**- a kind of flip-flop argument. Statement S opposes **(contrasts)** the idea of 1, while statement P again **contrasts** the opposition of S and together they are in sync with the central idea presented in sentence 1. Statement R fits in after Q as it describes Keynes concern with respect to the risk mentioned in Q. These two statements are in sync with the central theme of statement 6.  
Hence, the correct sequence is SPQR.
100. Ans. A.  
The joke referred to in P is obviously referring to the question "Skeletons?" The structure used in SP is an **idea Completion**. Hence, SP is one sentence sequence. Although that is enough to give us an answer, the sentence sequence QR is another one in the idea completion format.  
Thus, Option (A) is correct.

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