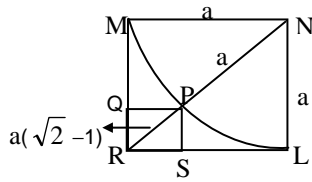


Explanatory Notes for TEP0510

Solutions for questions 1 to 3:

1.



It is given that RS passes through L and RQ passes through M.

On drawing the line RSL and RQM, the diagram shown above results. From the diagram, it is clear that MNL R has to be a square and P has to be the mid point of the arc

→ (1)

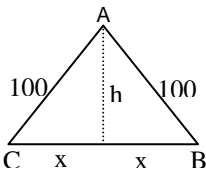
As P is the mid-point of the arc, RN passes through P, RP = $a(\sqrt{2} - 1)$

where MN = PN = a

$$\Rightarrow PQ = \frac{RP}{\sqrt{2}} = a(\sqrt{2} - 1)/\sqrt{2}$$

$$\therefore MN^2 : PQ^2 = 2 : 3 - 2\sqrt{2} \quad \text{Choice (2)}$$

2.



The area (S)

$$\text{of } \Delta ABC = xh = \left(\sqrt{10,000 - h^2} \right) h$$

when h = 0, S = 0

Initially, as h increases, S increases

When h = 60 (x = 80), S = 4800

As h increases beyond that, S continues to increase upto a point and then begins to decrease.

As h = 80 (x = 60), S is once again 4800.

As h increases beyond 80, S decreases.

∴ If $S \geq 4800$, $60 \leq x \leq 80$. If x_1 and x_2 are two values satisfying the inequality, the difference in the perimeters is $(200 + 2x_1) - (200 + 2x_2) = 2(x_1 - x_2)$. The maximum value of this is $2(80 - 60) = 40$.

Choice (2)

Solutions for questions 3 and 4:

3. mo (6) = |6| = 6

mi (-1, 6) = -1

ma (6, -1) = 6

mo (-1) = |-1| = 1

mi (1, 6) = 1

Choice (1)

4. mi (2, -6) = -6

mo (-4) = |-4| = 4

ma (4, -6) = 4

mi (2, 4) = 2

mo (2) = |2| = 2

Choice (2)

Solutions for questions 5 to 9:

5. The data can be tabulated as below:

Sections	I	II	III	Total
----------	---	----	-----	-------

Number of questions

present 7 6 5 18

Minimum to be

3 3 3 9

Number to be answered

x y z (x + y + z)

Total answered (3 + x) (3 + y) (3 + z) 9 + (x + y + z)

= 15

other information: (1) $y > x$ (2) $y > z$

$$x + y + z = 15 - 9 = 6$$

These 6 questions have to be distributed among x, y, and z in such a way that $y > x$ as well as $y > z \rightarrow$ (1)

The number of questions available for selection, after the minimum of 3 are selected, from the sections are:

y has $6 - 3 = 3$, x has $7 - 3 = 4$, z has $5 - 3 = 2$

→ (2)

When (1) and (2) are combined, the possible combinations, for the additional questions above the minimum, are:

	y	x	z	Total
1.	3	2	1	6
2.	3	1	2	6

i.e., the different combinations for selection, including the minimum of 3 questions from each section, are:

	y	x	z	Total
1.	6	5	4	15
2.	6	4	5	15

The result just obtained could have, in this particular case, more easily been arrived at. Since the average number of questions = $15/3 = 5$ and to have more than the other two sectors, minimum number of questions = 6.

Number of ways of making the selection is:

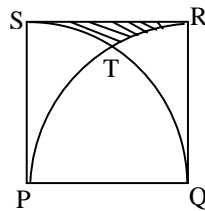
$$({}^6C_6 \cdot {}^7C_5 \cdot {}^5C_4) + ({}^6C_6 \cdot {}^7C_4 \cdot {}^5C_5)$$

$$(1 \times 21 \times 5) + (1 \times 35 \times 1)$$

$$= 105 + 35 = 140$$

Choice (2)

6.



Shaded area = Area of square PQRS

- Area of sector PSQ

- Area of sector QRS

+ Area of region PTQ

$$= 1 - \frac{\pi}{4} - \frac{\pi}{4} + \Delta \text{ (say)}$$

Δ (Area of region PTQ)

$$= \left\{ \begin{array}{l} \text{Area of sector PTQ} \\ + \text{Area of Sector QTP} \\ - \text{Area of triangle PTQ} \end{array} \right\} = \frac{\pi}{6} + \frac{\pi}{6} - \frac{\sqrt{3}}{4}$$

$$\therefore \text{Shaded area} = 1 - \frac{\pi}{2} + \frac{\pi}{3} - \frac{\sqrt{3}}{4} = 1 - \frac{\pi}{6} - \frac{\sqrt{3}}{4}$$

Choice (1)

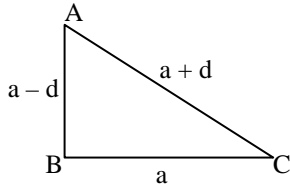
7. PST + QRT

= Area of union of quadrants – Common area

$$= \frac{\pi}{6} + \frac{\sqrt{3}}{4} - \frac{\pi}{3} + \frac{\sqrt{3}}{4} = \frac{\sqrt{3}}{2} - \frac{\pi}{6}$$
 Choice (3)

8. The basic Pythagorean triplet in A.P. is 3, 4, 5 and any multiple of either 3 or 4 or 5 is a possible answer. Among the choices only 56 is a multiple of 4.

Alternate method:



Let the sides be $a - d, a, a + d$
 $\therefore (a + d)^2 = (a - d)^2 + a^2 \Rightarrow (a + d)^2 - (a - d)^2 = a^2$
 $\Rightarrow 4ad = a^2 \Rightarrow a = 4d$
 The sides are $3d, 4d, 5d$.
 And only 56 is a possible multiple of $4d$.
 Choice (4)

9. If sum of roots of $x^2 + px + q = 0$ is equal to the product of the roots then, $-p = q$ and if p and q are roots of $x^2 + mx + n = 0$, then $m =$ sum of roots $= 0$ and $x^2 = -n \Rightarrow n \leq 0$
 $\Rightarrow n$ is not positive (since x is real)
 Choice (3)

Solutions for questions 10 and 11:

10. Given $f(x, y) = x^2 + 2x - y^2$
 then $f(y, x) = y^2 + 2y - x^2$
 So, $f(x, y) \neq f(y, x)$
 $f(x, -y) = x^2 + 2x - y^2$
 So, $f(x, y) = f(x, -y)$ Choice (2)

11. Given $f(x, y) = x^3 - 3x^2 + 7|x| + 6y + 8$
 $f(y, x) = y^3 - 3y^2 + 7|y| + 6x + 8$
 So, $f(x, y) \neq f(y, x)$
 $f(x, -y) = x^3 - 3x^2 + 7|x| - 6y + 8$
 So, $f(x, y) \neq f(x, -y)$
 $f(-x, y) = -x^3 - 3x^2 + 7|x| - 6y + 8$
 So, $f(x, y) \neq f(-x, y)$ Choice (4)

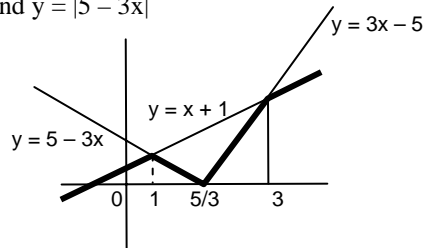
Solutions for questions 12 and 13:

12. The difference between the three-digit number and the number formed by reversing the digits is always a multiple of 99. It can be 99, 198, . . . , 891. Given that P (the difference of Q and its reverse) $= 22770$
 $= (99) (5) (46)$
 \therefore The difference between Q and its reverse is 495 and $P = 46$. When both P and Q are inverted the product will be $(P + \Delta P) (Q + \Delta Q)$ where $P = 46$, and $\Delta P = 64 - 46 = 18$; ΔQ is 495
 Now difference between $P (Q + \Delta Q)$ i.e., the first product that Ritu calculated, and $(P + \Delta P) (Q + \Delta Q)$ is given as 12816. Therefore we can calculate Q to be 217. Hence correct product $= 9982$
 Choice (1)

13. Minimum possible sum of the digits of Q is possible when Q minimum.
 (such that $\Delta Q = 495$)
 $\therefore Q = 106$
 \therefore Sum of the digits of $Q = 1 + 0 + 6 = 7$
 Choice (2)

Solutions for questions 14 to 20:

14. $y =$ Minimum of $\{(x + 1), |5 - 3x|\}$.
 The changes in the value of y can be easily understood if graphs are drawn for $y = (x + 1)$ and $y = |5 - 3x|$

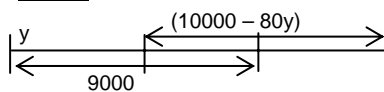


The bold line represents the minimum of $(x + 1)$ and $|5 - 3x|$. It is clear from the figure that the required range of x is $1 \leq x \leq 5/3$
 Choice (2)

15. Case 1: 10 km = 1000 m

Let speed of $A = x$ m/s.
 Speed of $B = y$ m/s
 $\therefore 9500/y - 10000/x = 50$
 i.e., $9500x - 10000y = 50xy \rightarrow (1)$

Case 2:



$\frac{10000 - 80y}{y} = \frac{9000}{x} \rightarrow (2)$
 From (1) and (2)
 $76000x - 80000y = 50000x - 45000y$
 $\Rightarrow 26000x = 35000y \Rightarrow x/y = 35/26$
 Choice (3)

16. A can complete the work in 6 days
 B can complete the work in 1.5 days
 C can complete the work in 18 days
 Work complete by A and C in one day is $1/6 + 1/18 = 2/9$
 Work completed in 1.5 days $= (2/9) (3/2) = 1/3$
 Time taken by A, B and C together to complete the entire work $= 1/(1/6 + 1/1.5 + 1/18) = 18/16$
 \therefore time taken to complete $2/3^{\text{rd}}$ of work $= (2/3) (18/16) = 3/4$
 Total time taken to complete the work $= 1.5 + 0.75 = 2.25$ days.
 Choice (2)
17. The squares that can be observed will need to have sides that are multiples of both 2 and 3, i.e., 6, 12, . . . etc.
 \therefore we have $\frac{36}{2} = 18$ columns and $\frac{36}{3} = 12$ rows
 of 3×2 rectangles which fill up the square.
 The smallest square is of 6 cm side.
 This can be chosen in $(18 - 3 + 1)$ ways along any row and the row can be chosen in

$(12 - 2 + 1)$ ways.

\therefore for a square of side 6 cm, we can choose in 16×11 ways. The next smallest square has a side of RCM.

This can be chosen in $(18 - 6 + 1)$ ways along any row and the row can be chosen in $(12 - 4 + 1)$ ways

\therefore For a square of side 12cm, we can choose in 13×9 ways.

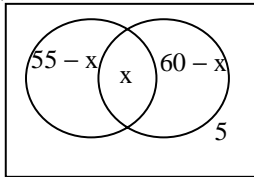
Similarly, if the side of square is 18, 24, 30 and 36 we can choose in 10×7 , 7×5 , 4×3 and 1×1 ways, respectively.

\therefore A square can be chosen in

$$176 + 117 + 70 + 35 + 12 + 1 = 411 \text{ ways.}$$

Choice (3)

18. Let $x\%$ of the families read both the newspapers, then



$$\Rightarrow (55 - x) + x + (60 - x) + 5 = 100$$

$$\Rightarrow x = 120 - 100 = 20$$

Choice (3)

19. The distance between the two stations = 660 km
As the train T_2 covered 420 km, both trains travelled for 7 hours, but T_1 travelled only 240 km. i.e. the distance travelled by T_1 in 6 hours.

\therefore Halting time = 1 hour = 60 minutes

Let number of town stations = x

Number of village stations = y

The possibilities are

$$x = 0 \quad y = 20 \text{ (or)}$$

$$\therefore 7x + 3y = 60$$

$$x = 3 \quad y = 13$$

(or)

$$x = 6 \quad y = 6$$

but $x < y$

$$\therefore x = 3 \quad y = 13$$

$$x = 0 \quad y = 20$$

Total number of stations is $(3 + 13) = 16$ or $(0 + 20) = 20$.

\therefore at least 16.

Choice (2)

20. p, q, r are the three numbers.

$$\text{Sum of the squares} = (p^2 + q^2 + r^2) \rightarrow (1)$$

Sum of products of 2 out of 3 taken at a time

$$= pq + qr + rp \rightarrow (2) \text{ given that } (1) = (2)$$

i.e., $p^2 + q^2 + r^2 = pq + qr + rp$, multiplying with

$$2, \text{ and then transposing all terms to one side, } 2p^2 + 2q^2 + 2r^2 - 2pq - 2qr - 2rp = 0.$$

$$\text{Regrouping the terms, } (p^2 + q^2 - 2pq) + (q^2 + r^2 - 2qr) + (r^2 + p^2 - 2rp) = 0 \Rightarrow (p - q)^2 + (q - r)^2 + (r - p)^2 = 0$$

Sum of squares of three real quantities is zero.

The only possibility is that each of the squares is independently equal to zero.

$$\Rightarrow (p - q)^2 = 0, (q - r)^2 = 0, (r - p)^2 = 0$$

$$\Rightarrow p = q = r \rightarrow (3)$$

$$p^3qr^2 = p^3 \cdot p \cdot p^2 = p^6 \Rightarrow (4)$$

Of the given options, the first one equals $(3p^2)^3 = 27p^6$, the second one equals $(3p^2)^3 = 27p^6$ and the third one equals $p^2/2(2p^4) = p^6$.

Choice (3)

Solutions for questions 21 to 23:

21. There are 168 Lyli's, 192 Lacil's and 224 Laisy's

Now if n number of packets are formed and each type of flower is equally distributed among n packets, then n is a factor of 168, 192 and 224. Also if total revenue from sale of each type of flower is the same.

Then $168 \times P_1 = 192 \times P_2 = 224 \times P_3 = S$ (say) where P_1, P_2, P_3 are the prices of each type of flower.

Now S is a multiple of 168, 192 and 224.

Now total revenue is $3S$ dollars.

Let the price per packet be P dollars then n packets $\times P$ dollars / packet = $3S$ dollars.

$$\Rightarrow P = \frac{3S}{n} = \frac{(3)[\text{a multiple of } 168, 192 \text{ and } 224]}{\text{a factor of } 168, 192 \text{ and } 224}$$

P is minimum when $3S$ is minimum and n is maximum

$$\Rightarrow P_{\min} = \frac{(3)[\text{LCM of } (168, 192, 224)]}{\text{HCF of } (168, 192, 224)}$$

$$= \frac{3 \times 1344}{8} = 3 \times 168 = 504$$

Choice (3)

22. The minimum value of S

$$= \text{LCM of } (168, 192, 224) = 1344.$$

$$\Rightarrow \text{For Laisy the revenue} = 224 \times P_3 = 1344.$$

$$\Rightarrow P_3 = 6 \text{ dollars.}$$

Similarly, $P_1 = 8$ dollars

$$\therefore P_3 > P_1 \text{ by } \frac{6-8}{8} \times 100 \text{ or less by } 25\%$$

Choice (2)

23. The total revenue = $3S$, where S is the revenue from each type of flower and is equal to a multiple of 168, 192 and 224.

The minimum possible revenue, other than when S is the L.C.M of 168, 192 and 224 will be the next multiple of the L.C.M multiplied by 3.

i.e., $S = 2$ (L.C.M) = (1344) (2).

and total revenue = 3 (2) (1344) = 8064

Alternately:

Since the total minimum proceeds in the first case is 504 (8) = 4032, the next possible multiple from the choices can only be 8064.

Choice (3)

Solutions for questions 24 to 26:

24. By inspection we can see that the production of Type 1 and Type 2 is highest in the year 2002 and the profits per meter are also the highest. Thus, obviously, no other year comes close to it.

Alternative method:

$$\text{Profit in 1998 is } 3456700 \times 0.1 + 234900 \times 0.3 + 140000 \times 0.75 = 5,21,140/-$$

$$\text{Profit in 1999 is } 4598700 \times 0.5 + 765740 \times 0.5 + 19000 \times 0.25 = 6,17,555/-$$

$$\text{Profit in 2001 is } 6578900 \times 0.1 + 345780 \times 0.5 + 35900 \times 1 = 8,66,680/-$$

$$\text{Profit in 2002 is } 6754300 \times 0.2 + 987400 \times 1 + 27000 \times 1.5 = 23,78,760/-$$

\therefore Highest profit is in 2002.

Choice (2)

25. By observation we can see that the profit from Type 1 is greater than Type 2 as well as Type 3 for all the five years except in 1999 where Type 2 is greater than Type 1. Choice (4)

26. As calculated in Q.86 the profit in 2001 was Rs.866680/- and that in 2002 was 2378760.

$$= \frac{2378760 - 866680}{866680} \times 100 = 174.46\%$$
 Choice (1)

Solutions for questions 27 to 29:

27. For a country to perform better, the investment-earnings ratio in 2003 should be less than the investment-earnings ratio in 2002. The countries which satisfy this are Brazil, Indonesia, S.Korea, Mexico and the philippines. Choice (2)

28. Let the investment of India be Rs.500. So, earnings = Rs.100
 Investment in the three sections = Rs.100, Rs.200, Rs.200
 If x is the earnings in the manufacturing sector, then $100/x = 10/3, \Rightarrow x = Rs.30$
 Similarly, let the earnings in the service sector be y.
 $200/y = 10, y = Rs.20$
 \therefore Earnings in the agriculture sector = $100 - (30 + 20) = Rs.50$
 Investment to earnings ratio = $200/50 = 4$
 Choice (1)

29. The total earnings is the average of the three sectors (weighted by the respective investment). Since, the total earnings is the average, atleast one of the sectors should be more than the average.
 \therefore For all the 12 countries it satisfies.
 Choice (1)

Solutions for questions 30 to 32:

30. Out of 700 units available in WH3, 300 will be sent to outlet Y as this has the lowest cost and balance to X, which has the next highest cost. Hence, the total cost incurred
 $= 300 \times 12 + 400 \times 16 = Rs.10,000.$
 Choice (2)

31. It is given that each warehouse can supply to only one C & F. Hence, to incur the minimum cost. Maximum units should be sent to that year for which the transportation is the least. For C & F Y and X the only possible warehouse is WH3. From the remaining warehouses WH2 can supply to either Y or Z. The total cost is less when WH2 supplies to Y.
 Total cost incurred
 $= (300 \times 10 + 400 \times 14 + 600 \times 16)$
 $= 3000 + 5600 + 9600 = Rs.18,200.$
 Choice (2)

32. Total cost incurred for the given shipping matrix
 $= 100 \times 14 + 140 \times 18 + 40 \times 10 + 200 \times 16 + 100 \times 20 + 160 \times 6 = Rs.10,480$
 Choice (4)

Solutions for questions 33 to 36:

33. As per the given graph a two-wheeler has a direct cost saving of 150 paise on a km, of this Fuel accounts for 60%. \therefore Total Direct Cost Saving = $150 \times 100 = Rs.150$
 \therefore Savings on Fuel = $\frac{150 \times 60}{100} = 90$
 Choice (4)

34. Cost Saving on Car = $240 \times 100 = Rs.240$
 Toll paid by Car = $240 \times \frac{50}{100} = Rs.120$
 \therefore Net Cost Saving = $240 - 120 = Rs.120$
 Similarly the Net Cost Saving for other categories can be found at
 Net cost saving – LCV = Rs.36
 Net cost saving – HCV = Rs.27
 Net cost saving – 2 wheeler = Rs.147
 Net cost saving – Bus = Rs.198
 \therefore Bus has the highest net cost saving.
 Choice (4)

35. This question can be answered by simple observation of the cost savings graph. Indirect and Intangible cost savings are denoted by B and C respectively.
 \therefore Indirect + Intangible cost saving for a HCV = $280 - 120 = 160$ paise/km.
 Indirect + Intangible cost saving for a Bus = $360 - 120 = 240$ paise/km
 \therefore Difference is $240 - 150 = 80$ paise/km.
 Choice (3)

36. Of all the given categories LCV has the lowest cost saving and Bus has the highest cost saving per kilometer. If the Toll Tax is the same for every vehicle irrespective of the category of the vehicle then it means that LCV the least net cost saving.
 Choice (1)

Solutions for questions 37 to 40:

37. The given statement is of the form of :
 Only if p then q.

The implications are : 1) $q \Rightarrow p$
 2) $\sim p \Rightarrow \sim q$

Given that Seeta had 3 sweets and Ram had 2 sweets i.e. q is the true which means that p is true i.e. Shyam eats atleast 3 sweets. But we know that all of them had a different number of sweets. \therefore Shyam had one sweet.
 The given question can be answered with statement I alone.

As per statement II, q is true which means Shyam eats atleast three sweets but since Ram had one sweet, Shyam can have either two or three sweets hence the question cannot be answered.

Choice (1)

38. From statement I alone, for a perfect square which ends with 6, the digit in the ten's place must always be odd. Since N ends with 46, we can definitely conclude that it's not a perfect square.

So, statement I alone is sufficient.

From statement II alone, $N^{99} = (N^{33})^3$, so it is a perfect cube.

N^{99} will be a perfect square only when N is a perfect square. Since N^{99} is not a perfect square N is not a perfect square.

So statement II alone is sufficient.

Choice (2)

39. Let the length of the train be L.. Let the speed of the train be S. Time taken by train to cross a stationary pole = $\frac{L}{S}$. Using statement I,

$$\frac{L + 2L}{S + 3S} = 30 \Rightarrow \frac{L}{S} = 40.$$

Statement I alone is sufficient.

Using statement II, $L + 200 = 40(S + 5)$

$$\Rightarrow \frac{L}{S} = 40.$$

Statement II alone is sufficient.

Hence either statement is sufficient.

Choice (2)

40. Let the weights of A, B, C and D be a, b, c and d respectively. $\frac{c + d}{2} = 40$, $c + d = 80$.

Using statement I,

$$a = \frac{b + c + d}{3} \Rightarrow 3a = b + c + d \text{ ----- (1)}$$

As a and b are unknown, the average weight of the four cannot be found. Hence statement I alone is insufficient.

Using statement II,

$$b = \frac{a + c + d}{3} \Rightarrow 3b = a + c + d \text{ ---- (2)}$$

As a and b are unknown, the average weight of the four cannot be found.

Hence statement II alone is insufficient.

Using both statements adding (1) and (2),

$$3(a + b) = a + b + 2(c + d) \Rightarrow a + b = c + d.$$

Average weight of the four is

$$\frac{a + b + c + d}{4} = \frac{2(c + d)}{4} = 40 \text{ kg.}$$

Both statements are required.

Choice (3)

Solutions for questions 41 and 42:

The following information is available:

(i) $Q = N - 3 (\Rightarrow N > Q)$

(ii) O is exactly in the center (i.e., if the values are 1 to 7, then $O = 4$, and so on).

(iii) $O - S = P - Q$

$$(\Rightarrow O > S \text{ and } P > Q)$$

(iv) $T > S$

As per the second question, let $N = 7$, an then proceed to complete the arrangement as below:

$$Q = N - 3 = 7 - 3 = 4$$

$$\underline{4 \quad 5 \quad 6 \quad 7}$$

$$Q \quad \quad \quad N$$

Now O must be either 5 or 6.

(I) Let $O = 5$

$$\underline{2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8}$$

$$R \quad S \quad Q \quad O \quad P \quad N \quad T$$

(ii) Let $O = 6$:

$$\underline{3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9}$$

$$Q \quad \quad \quad O \quad N$$

As $P > Q$, Hence $P \geq 5$.

If P is 5, then $s = 3$

($\therefore O > S$) but then

$$O - S \neq P - Q.$$

With similar reasoning

We find that no arrangement can be formed when $O = 6$.

Hence $O = 5$ and the 1st arrangement works.

41. Observing the arrangement incase (i):

$$\underline{2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8}$$

$$R \quad S \quad Q \quad O \quad P \quad N \quad T$$

$$N - S = 7 - 3 = 4$$

$$T - x = 8 - x = 4$$

$$\Rightarrow x = 4 = Q.$$

Choice (4)

42. As $N = 7$ in the above arrangement, hence

$$R + T = 2 + 8 = 10$$

Choice (2)

Solutions for questions 43 to 45:

43. Choice (1): AFC : All the three choices are particular hence no logical relation can exist between them, hence incorrect.

Choice (2): DBE : No rule is violated, hence correct.

Choice (3): BAF: The only order can be BFA and in that the term "Clubs" is not distributed in the premises but it is distributed in the conclusion, hence incorrect.

Choice (4): DEA : The term "Clubs" is present in all the three statements, hence incorrect.

Choice (2)

44. Choice (1): AEC : The term "Batsman" is present in all three statements, hence incorrect

Choice (2): BFD : The term "Keepers" is present in all three statements, hence incorrect.

Choice (3): ADF : Only one statement is negative, hence incorrect.

Choice (4): FCB : The correct order is BCF and no rule is violated, hence correct.

Choice (4)

45. Choice (1): BCA: The correct order could be BCA, BAC or ACB but all of them violate the given rules hence are incorrect.

Choice (2): DFA: The term 'Numerals' is present in all the statements, hence incorrect.

Choice (3): BEF: The term 'Numerators' is present in all the statements, hence incorrect.

Choice (4): BDC : The correct order is BCD and it does not violate any of the given rules.

Choice (4)

Solutions for questions 46 to 48:

From (i), (ii), (iv) and (v), we get the following arrangement.

A — — C
 (D) (D)

G — — F

46. From I, we get

A E H C
G D B F

or

A H E C
G B D F

Hence, I alone is not sufficient.

From II, we get

A E H C
G D B F

Hence, II alone is sufficient.

From III, we get the same two arrangements as from I.

Hence, II alone is sufficient.

Even using statements I and III we do not get a unique arrangement as we get two arrangements as shown

A H E C
G B D F

OR

A E H C
G D B F

Choice (1)

47. If E sits adjacent to A, we get the following arrangement:

A E H C
G D B F

Here, only 'B sits exactly between F and D' is correct.

Choice (3)

48. If H and E sit in the same column then, we get the following arrangement:

A H B C
G E D F

or

A B H C
G D E F

In either case, B sits in the same column as D.

Choice (2)

Solutions for questions 49 to 53:

49. Choice (2) is appropriate because in (2) it is said that "India's oil import bill has become burdensome" which is followed by "the budget deficit" which is actually the result of increase in import bill.

Choice (2)

50. Choice (1) is the most appropriate choice which can complete the paragraph. The paragraph is about "focus of R & D effort in electronics industry" and choice (1) tells us about the focus of BEL laboratory. Choices (2), (3) and (4) cannot fit into the blank logically.

Choice (1)

51. Choice (3) is the appropriate choice because in the paragraph it is mentioned that resources are in severe crunch because of the capital structure consisting of equity and loans due to which the

management has been asking for a restructuring of its capital base which is mentioned in (3). Hence (3) is the answer.

Choice (3)

52. Choice (4) is the appropriate choice because as said in the paragraph price control on tyre companies compels them to reduce production which in turn would seriously affect the road transport industry.

Choice (4)

53. Choice (2) is the appropriate choice because in the paragraph it is mentioned that "there were plain colours, cloudy effects and self design tiles followed by the introduction of screen printed tiles with a variety of designs.

Choice (2)

Solutions for questions 54 to 58:

54. Abridge is to shorten. Hence it can mean curtail (reduce the extent or quantity) but not summary (a gist), erosion (wear out) or contradiction (ideas or statements opposed to one another).

Choice (2)

55. Rendezvous is a meeting at an agreed time and place. Hence the nearest in meaning is venue which refers to a place where something happens. The other three words are not connected to rendezvous though they can be associated with the tragic end of Columbia.

Choice (3)

56. Surrogate means a substitute especially a person deputizing for another in a specific role or office.

Choice (2)

57. Morass means an area of muddy or boggy ground. It can also mean a complicated or confused situation. Hence in a political morass, morass refers to quagmire (to become complicated).

Choice (1)

58. Construed means interpreted.

Choice (3)

Solutions for questions 59 to 63:

59. D is obviously the opening sentence. We must now see whether E or B follow it. E gives the view of the proponents while B gives that of the critics. Since A qualifies what is expressed in B, BA must go together. Hence D is followed by E and then B A would be the right order.

Choice (2)

60. B is the opening sentence as it introduces the subject and BE go together. This is followed by A. A follows E (where a mention of Suu Kyi is made hence 'she' in A), better than D. D and C go together – 'road to democracy' and 'map'.

Choice (4)

61. While A or C can be the opening sentence of the para D A E go together – D mentions military power, which is elaborated in A and E. CB follow this logically extending the idea to other areas.

Choice (1)

62. E and A cannot be the first sentence of the paragraph - E begins with "The report" indicating it has been mentioned earlier and A is not very good as the opening sentence of the paragraph (possible but not probable). Hence C is the opening sentence. E follows C - 'the report' in E refers to 'a report' in C.

Choice (3)

63. D cannot be the opening sentence (. . . . in other words - indicates it follows something). A can be the opening sentence but A followed by B does not make much sense. Between choice 2 and 4, we have to see whether EC is followed by A or D. A is a better option because D follows A.

Choice (2)

Solutions for questions 64 to 68:

64. When the verb in the 'if' clause is in the past the verb in the main clause takes 'would' and present tense.

Choice (3)

65. The word 'also' is redundant when 'and' is used. Only choice 1 does not have this combination.

Choice (1)

66. The simple past tense (overlooked) is correct in the context.

Choice (2)

67. The only phrasal verb that is correct is 'loomed up'. Between 1 and 4 'led us' is better than 'fetched us' in the context.

Choice (4)

68. When we search through a lot of things the appropriate word is 'rummaged' (to move things around carelessly while searching) and not 'plunged' or 'prodded'. Choice 4 is incorrect because it does not have the preposition 'for'.

Choice (3)

Solutions for questions 69 to 78:

69. Refer to para 1 last sentence which supports choice 2.

Choice (2)

70. Refer to para 6 (beginning on a cloudless night). The next para talks of 'irregular stirring' and para 3 says 'layer clouds are formed by widespread irregular stirring'.

Choice (4)

71. Refer to the last sentence of para 8 (when the cloud layer . . . instead of status).

Choice (4)

72. Statement I is negated by last but one para. Statements II and III are supported by the last para. (line 1 and last line).

Choice (3)

73. Last para, line 7 (stratosphere 20 to 30 kms) states choice 2.

Choice (2)

74. Refer to the last line of para 2 and the first line of para 3.

Choice (4)

75. The passage talks of various financial instruments that a cash rich company can invest in.

Choice (2)

76. Refer to the last but one para which says discounting of bills requires a lot of documentation. Para 9 says inter corporate deposits require very little paperwork.

Choice (3)

77. Refer to para 10, the call money option is suggested for 'cash surplus company, the types who sell cash and buy credit'.

Choice (4)

78. Refer to para 7, line 1. The para deals with other parameters (than profit) are important for making investment decisions. The author's opinion is also reflected in para 3, line 1.

Choice (2)

Key for TEP0510

1. 2	11. 4	21. 3	31. 2	41. 4	51. 3	61. 1	71. 4
2. 2	12. 1	22. 2	32. 4	42. 2	52. 4	62. 3	72. 3
3. 1	13. 2	23. 3	33. 4	43. 2	53. 2	63. 2	73. 2
4. 2	14. 2	24. 2	34. 4	44. 4	54. 2	64. 3	74. 4
5. 2	15. 3	25. 4	35. 3	45. 4	55. 3	65. 1	75. 2
6. 1	16. 2	26. 1	36. 1	46. 1	56. 2	66. 2	76. 3
7. 3	17. 3	27. 2	37. 1	47. 3	57. 1	67. 4	77. 4
8. 4	18. 3	28. 1	38. 2	48. 2	58. 3	68. 3	78. 2
9. 3	19. 2	29. 1	39. 2	49. 2	59. 2	69. 2	
10. 2	20. 3	30. 2	40. 3	50. 1	60. 4	70. 4	