SOLUTION

Explanatory Solution ***

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

NUMERICAL ABILITY

1. I. $x^2-14x+48=0$

$\Rightarrow x^2-8x-6x+48=0$

$\Rightarrow x(x-8)-6(x-8)=0$

$\Rightarrow (x-6)(x-8)=0$

$\therefore x=6$ or 8

II. $y^2-5y+6=0$

$\Rightarrow y^2-3y-2y+6=0$

$\Rightarrow y(y-3)-2(y-3)=0$

$\Rightarrow (y-2)(y-3)=0$

$\therefore y=2$ or 3

Clearly, $x>y$

2. I. $x^2+9x+20=0$

$\Rightarrow x^2+5x+4x+20=0$

$\Rightarrow x(x+5)+4(x+5)=0$

$\Rightarrow (x+4)(x+5)=0$

$\therefore x=-4$ or -5

II. $y^2+7y+12=0$

$\Rightarrow y^2+4y+3y+12=0$

$\Rightarrow y(y+4)+3(y+4)=0$

$\Rightarrow (y+3)(y+4)=0$

$\therefore y=-3$ or -4

Clearly, $x \le y$

3. I. $x^2=529$

$\therefore x=\sqrt{529}=\pm 23$

II. $y=\sqrt{529}=\pm 23$

Clearly, the relationship cannot be established as x can be 23 and y can be – 23 or vice versa, so x can be greater than or smaller them y or equal to y.

4. The word INCREASE consists of 8 letters in which E comes twice.

$\therefore$ Number of arrangements $= \frac{8!}{2!}$

$= \frac{8\times7\times6\times5\times4\times3\times2\times1}{2\times1}$

$=20160$

5. $2\pi=1047.2$

$\Rightarrow 2\times\frac{22}{7}\times r=1047.2$

$\Rightarrow r=\frac{1047.2\times7}{2\times22}=166.6$ m

Area of the circle $=\pi r^2$

$=\frac{22}{7}\times166.6\times166.6$

$=87231.76\text{m}^2$

6. Ratio of the profit = Ratio of the equivalent capitals

$=60000\times12:100000\times6$

$=720000:600000=6:5$

$\therefore$ Shirish's share in the profit

$=\text{Rs.}\left(\frac{5}{11}\times151800\right)=\text{Rs. }69000$

7. $4\times1+2=4+2=6$

$6\times2+3=12+3=15\neq 18$

$15\times3+4=45+4=49$

$49\times4+5=196+5=201$

$201\times5+=1005+6=1011$

8. $48\times\frac{3}{2}72;\ 72\times\frac{3}{2}=108$

$108\times\frac{3}{2}=162;\ 162\times\frac{3}{2}=243$

$243\times\frac{3}{2}=364.5\neq366$

9. $2\times6+7\times6=12+42=54$

$54\times5+6\times5=270+30=300$

$300\times4+5\times4=1200+20=1220$

$1220\times3+4\times3=3660+12$

$=3672\neq3674$

$3672\times2+3\times2=7344+6=7350$

10. $2^3=8;\ 3^3=27$

$4^3=64;\ 5^3=125$

$6^3=216\neq218$

$7^3=343$

11. Percentage of minimum marks obtained (54) in English

$$= \frac{54}{75} \times 100 = 72\%$$

Percentage of minimum marks obtained (93) in science

$$= \frac{93}{125} \times 100 = 74.4\%$$

Clearly two students B and C passed in both the examinations.

12.(d)

13. Marks obtained by all the students together in Hindi
$= 34+34+33+35+36+37$
$= 209$
$\therefore$ Required average
$$= \frac{209}{6} = 34.83$$

14. Total marks obtained by F $= 468.5$
Sum of maximum marks $= 150+75+125+50+100+125$
$= 625$
$\therefore$ Required per cent
$$= \frac{468.5}{625} \times 100 \approx 75\%$$

15. Marks obtained by B in Maths
$$= 150 \times \frac{64}{100} = 96$$
Marks obtained by B in social studies $= 63$
So that required total $= 96+63 = 159$.

16. $21^{?} \times 21^{6.5} = 21^{12.4}$
$$\Rightarrow \quad 21^{?} = \frac{21^{12.4}}{21^{6.5}} = 21^{12.4-6.5}$$
$$\Rightarrow \quad 21^{?} = 21^{5.9}$$
$$\Rightarrow \quad ? = 5.9$$

17. $\dfrac{3545.64}{12.25 \times 21.6} = 13.4$

18. $? = \dfrac{646 \times 15.5}{100} + \dfrac{298 \times 24.5}{100}$
$= 100.13+73.01 = 173.14$

19. $? = 2\frac{1}{3} + 1\frac{1}{5} + 2\frac{1}{4}$
$$= 2+1+2+\left(\frac{1}{3}+\frac{1}{5}+\frac{1}{4}\right)$$
$$= 5 + \frac{47}{60} = 5\frac{47}{60}$$

20. $\sqrt[3]{4096} = \sqrt[3]{16 \times 16 \times 16}$

21. Required increase $= 40-35 = 5\%$

22. Required percentage increase
$$= \frac{40-35}{35} \times 100 = \frac{100}{7} \approx 4$$

23. Required profit
$$= \text{Rs.} \left(265000 \times \frac{135}{100} \times \frac{140}{100}\right)$$
$= \text{Rs. } 500850$

24. Required average
$$= \frac{20+35+40+45+50+60}{6}$$
$$= \frac{250}{6} = \frac{125}{3} = 41\frac{2}{3}\%$$

25. Company Z earned the highest profit in the year 2008 as compared to the other years

26. $? = \sqrt[3]{1500} \approx 11.4$

27. $? = \dfrac{8}{5} \times \dfrac{15}{7} \times \dfrac{22}{3} = \dfrac{176}{7} \approx 25$

28. $? = 18.999 \times 12.005 \times 25.998$
$\approx 19 \times 12 \times 26 = 5928$
$\therefore$ Approximate answer ≈ 5930

29. $? = 666 \times \dfrac{11.5}{100} \times 888 \times \dfrac{18.3}{100} = 12446$

30. $? = \dfrac{2898}{22 \times 2} = 66$

31. Number of males in:
HR department $= 225 \times \dfrac{9}{25} = 81$
Marketing department $= 275 \times \dfrac{3}{5} = 165$
IT department $= 200 \times \dfrac{9}{40} = 45$
Finance department $= 175 \times \dfrac{2}{5} = 70$
Production department $= 375 \times \dfrac{11}{15} = 275$
$\therefore$ Total number of males
$= 81+165+45+70+275+200$
$= 836$

32. Number of females working in the HR department
$$= 225 \times \frac{16}{25} = 144$$

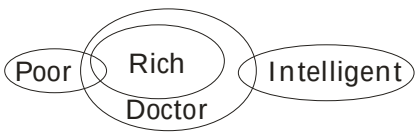
33. Requried ratio $= 375: 350 = 15:14$

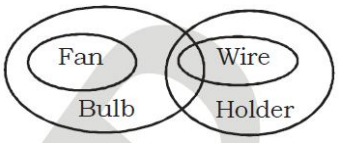
34. Number of females in:
HR department
$\Rightarrow$ $225 - 81 = 144$
Marketing department
$\Rightarrow$ $275-165 = 110$
IT department
$\Rightarrow$ $200-45 = 155$
Finance department
$\Rightarrow$ $375-275 = 100$
Merchandising department
$\Rightarrow$ $350-200 = 100$
$\therefore$ Number of females is lowest in production department.

35. Total marks employees
$= 225+275+200+175+375+350$
$= 1600$

REASONING ABILITY

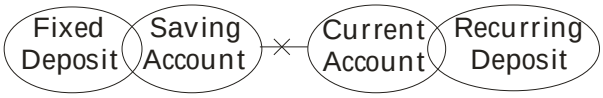
Question 36-38:





36.B, 37.E, 38.B

Question 39-40:



39.D

40.E

41-45:

Z, W/Q, Y, A, R, C, X, B, S, P,D, Q/W

41. (d), 42. (e), 43. (a) 44. (e), 45. (d)
46. (e) Really
47 (a) From ii: Y's gender is not clear. Thus, she may be father or mother.
From I : Y is wife of X, thus, mother.
48. (d) Statement I eliminates R, while statement II eliminates P and Q, we are not sure whether it is t or V.
49. (c) From I: B>A and B<C and D. B is the tallest.
From II : A >D and B>A, C
So, B>D also.
B is the tallest.
50. (d)
51. $Z \geq Y=X>P>Q \leq R$
52. (d) Y=X>Z W>R
53. (d) $S \leq T=W>R$
54. (c),
55. (a)

56 –60 :

Clearly, in the given arrangement number that are multiples of 3 are arranged first, in ascending ordrer; followed by multiples of 7 in ascending order.

56. (c) Step II: 51, 69, 49, 87, 93,77 70 56
Step III: 51 69 87 49 93 77 70 56
Step IV : 51 69 87 93 49 77 70 56
Step V : 51 69 87 93 49 56 77 70
57. (d) Previous steps cannot be determined in these types.
58. (a) Input 91 276 35 249 553 511 201 183
Step I: 183 91 276 35 249 553 511 201
Step II : 183 201 91 276 35 249 553 511
Step III : 183 201 249 276 35 553 511 91
Step IV : 183 201 249 276 35 91 553 511
Step V : 183 201 249 276 35 91 511 553
Since all the numbers get arranged in step V according to the logic above, final output come in step v.
59. (*)
60. (a)

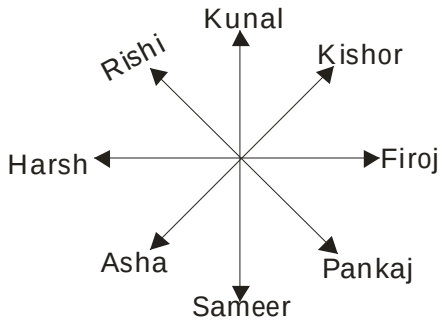
61-65 :

They - ho, are- na, very – pa
Intelligent – la you –sa
Welcome – pit student – od
Who/is – ka /da

61 (a), 62. (a), 63. (a)
64. (d)

65. (a)

66-70:



66.(d), 67. (c), 68. (a), 69. (a), 70. (b)