



J.K. SHAH[®]
TEST SERIES
Evaluate Learn Succeed

SUGGESTED SOLUTION

CA FOUNDATION

Test Code – JKN_QA_02

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$$1. \quad \text{P.V. of loan} = P \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] \quad n = 5 \times 12 = 60$$

$$= 6000 \left[\frac{(1.01)^{60} - 1}{0.01(1.01)^{60}} \right] \quad i = \frac{0.12}{12} = 0.01$$

$$= \text{Rs. } 2,69,729.74$$

$$\therefore \text{Value of Car} = 50,000 + 2,69,729.74$$

$$= 3,19,729.74$$

$$= \text{Rs. } 3,19,730$$

[ANSWER : B]

$$2. \quad \int x^3 \cdot e^x dx \quad \text{Taking } u = x^3, v = e^x$$

Using integration by parts,

$$\frac{du}{dx} = 3x^2, \int v dx = e^x$$

$$= x^3 (e^x) - \int (3x^2 \cdot e^x) dx$$

$$= x^3 e^x - [3x^2 \cdot e^x - \int 6x \cdot e^x dx]$$

$$= x^3 \cdot e^x - 3x^2 \cdot e^x + \int 6x \cdot e^x dx$$

$$= x^3 \cdot e^x - 3x^2 \cdot e^x + [6x (e^x) - \int 6 \cdot e^x dx]$$

$$= x^3 \cdot e^x - 3x^2 \cdot e^x + 6x \cdot e^x - 6 \cdot e^x + c$$

$$= (x^3 - 3x^2 + 6x - 6) \cdot e^x + c$$

[ANSWER : C]

3.

| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|----------------|------|------|------|------|------|------|------|------|
| Price C_x : | . | + | + | - | + | + | + | + |
| Demand C_y : | . | - | - | + | - | - | - | - |
| Concurrents | . | - | - | - | - | - | - | - |

$$\therefore C = 0, N = 7$$

$$\text{Now, } r_c = \pm \sqrt{\pm \left(\frac{2C-N}{N} \right)} = \pm \sqrt{\pm \left(\frac{-7}{7} \right)} = -\sqrt{-(-1)} = -1$$

[ANSWER : A]

$$4. \quad \text{Probability} = \frac{40}{50} = 0.8$$

[ANSWER : B]

5. 4, 7, 12, 19, 28, ?

$$4 + 3 = 7$$

$$7 + 5 = 12$$

$$12 + 7 = 19$$

$$19 + 9 = 28$$

$$28 + 11 = 39$$

[ANSWER : C]

6. Here $P = 5000$, $i = \frac{0.12}{12} = 0.01$, $n = 8 \times 12 = 96$, $PV = ?$

$$PV = P \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] = 5000 \left[\frac{(1.01)^{96} - 1}{(0.01)(1.01)^{96}} \right]$$

\therefore Value of house = 3,07,635.3

[ANSWER : A]

7. Here, $F = 3S + 3$ (i)

and $F + 3 = 2(S + 3) + 10$ (ii)

By trail & error method, $F = 33$, $S = 10$

[ANSWER : B]

8. In exclusive series, upper limit is not included in class frequency. [ANSWER : C]

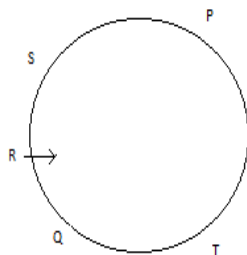
9. Here $N = 1,000$, $\mu = 42$, $\sigma = 24$

$$P(x > 50) = P\left(z > \frac{50-42}{24}\right) = P(z > 0.33) = 0.37$$

\therefore No of students = $0.37 \times 1000 = 370$

[ANSWER : A]

10.



R is facing to East

[ANSWER : A]

11. $6! - 2! \times 5! = 720 - 240 = 480$

[ANSWER : A]

12. $7x + 5y \geq 50$

[ANSWER : C]

13. $H_M = \frac{2}{\frac{1}{8} + \frac{1}{4}} = \frac{2 \times 8}{1+2} = \frac{16}{3} = 5.33$

[ANSWER : B]

14. $4x - 5y + 33 = 0 \rightarrow y$ on x (say)

$$\therefore 5y = 4x + 33$$

& $20x - 9y - 107 = 0 \rightarrow x$ on y

$$\therefore y = \frac{4}{5}x + \frac{33}{5}$$

$$\therefore 20x = 9y + 107$$

$$\therefore byx = 4/5 \text{ (i)}$$

$$\therefore x = \frac{9}{20}y + \frac{107}{20}$$

$$\therefore bxy = 9/20 \text{(ii)}$$

$$\text{Now, } r^2 = bxy \cdot byx = \frac{9}{20} \times \frac{4}{5} = \frac{36}{100} = 0.36$$

$$\therefore r = 0.6$$

$$\text{Now, } byx = r \cdot \frac{\sigma_y}{\sigma_x}$$

$$\therefore \frac{4}{5} = 0.6 \times \frac{\sigma_y}{\sigma_x}$$

$$\sigma_x^2 = 9$$

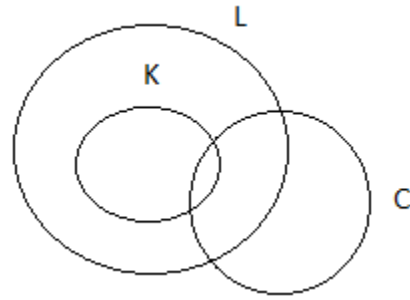
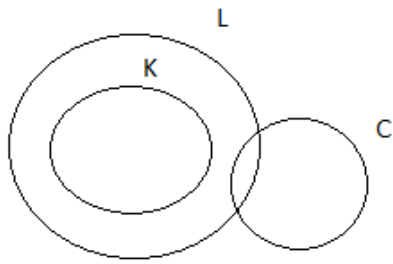
$$\therefore 0.8 = 0.2 \times \sigma_y$$

$$\therefore \sigma_x = 3$$

$$\therefore \sigma_y = 4$$

[ANSWER : C]

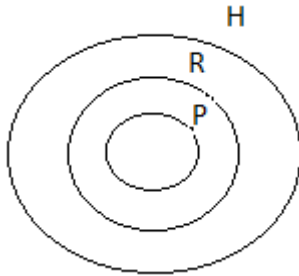
15.



Neither (I) nor (II) follows.

[ANSWER : D]

16.

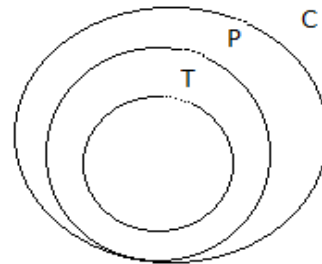
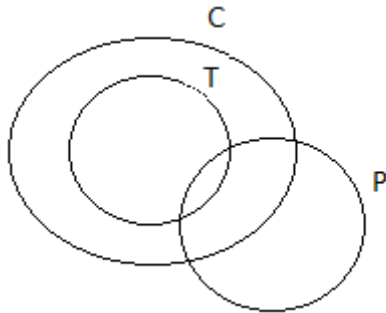


Some H are P follows

i.e. only II follows.

[ANSWER : B]

17.



Only (I) follows

[ANSWER : A]

18. $\mu - \sigma = 6$

$\mu + \sigma = 14$

$2\mu = 20$

$\therefore \mu = 10 \quad \therefore \sigma = 4$

[ANSWER : A]

19. $H = 96, L = 52$

$R = H - L = 96 - 52 = 46$

Coefficient of R = $\frac{H-L}{H+L} \times 100 = \frac{96-52}{96+52} \times 100 = \frac{46}{148} \times 100 = 31.08\%$

[ANSWER : B]

20. $P = 2000, i = \frac{0.09}{12} = 0.0075, n = 20 \times 12 = 240, F.V. = ?$

$F.V. = P \left[\frac{(1+i)^n - 1}{i} \right] = 2000 \left[\frac{(1.0075)^{240} - 1}{0.0075} \right] = \text{Rs. } 13,35,773$

[ANSWER : B]

21. $a = 2, S_6 = \frac{1}{3} (S_{12} - S_6)$ $S_n = \frac{n}{2} [2a + (n - 1) d]$

$\therefore 3S_6 = S_{12} - S_6 \quad \therefore 4S_6 = S_{12}$

$\therefore 4 \times \frac{6}{2} [2(2) + 5d] = \frac{12}{2} [2(2) + 11d]$

$\therefore 2[4 + 5d] = 4 + 11d$

$\therefore 8 + 10d = 4 + 11d$

$\therefore d = 4$

[ANSWER : A]

22. If $A^2 = A$ then A is either zero matrix or unit matrix.

$\therefore |A|$ is either 0 or 1.

[ANSWER : A]

23. Index Number = $\frac{\sum IW}{\sum W} = \frac{3544}{25} = 141.76$

Index Number Salary

100 2050

141.76 (?) = 2906.08

[ANSWER : A]

24. $r_s = 1 - \frac{6 \sum d^2}{n(n^2-1)}$ $\therefore 0.4 = 1 - \frac{6 \times \sum d^2}{6(35)}$

$\therefore \frac{\sum d^2}{35} = 0.6$ $\therefore \sum d^2 = 21$

Now correct $\sum d^2 = 21 - 9 + 16 = 28$

\therefore Correct $r_s = 1 - \frac{6(28)}{6(35)} = 1 - 0.8 = 0.2$

[ANSWER : B]

25.

| | | | | |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1 st | 2 nd | 3 rd | 4 th | 5 th |
| P | S | A | - | B |

A is at the 3rd place.

[ANSWER : C]

26. To avoid loss, $R \geq C$

R = Price \times No. of units

$\therefore 25y - 2y^2 \geq 10y$

= x (y)

$\therefore 15y - 2y^2 \geq 0$

= (25 - 2y) \cdot y

$\therefore 15y \geq 2y^2$

$\therefore 15 \geq 2y$

= 25y - 2y²

$\therefore 7.5 \geq y$

$\therefore y \leq 7.5$

\therefore Maximum Quantity of y = 7

[ANSWER : B]

27. For, 3 years $CI - SI = P_i^2 (i + 3)$

$$\therefore 228.75 = P(0.05)^2 (0.05 + 3)$$

$$\therefore P = \text{Rs. } 30,000$$

Now, $A = P(1 + i)^n \therefore A = 30,000 (1.05)^3 = 33075$

$$\therefore CI = A - P$$

$$= 3075 \text{ Rs.}$$

[ANSWER : B]

28. $G \rightarrow 6 \times 10 = 60$

$$B \rightarrow \frac{4}{10} \times 20 = \frac{80}{140}$$

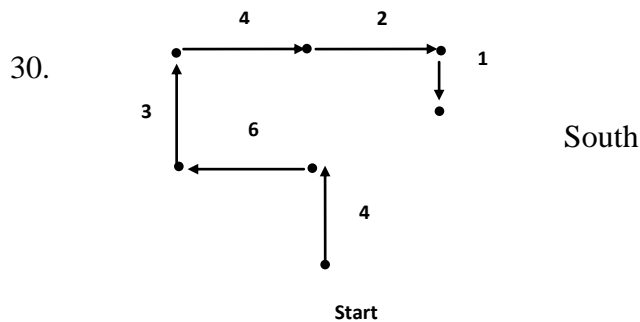
| Ball | Amount | |
|------|--------|----------------------------------|
| 10 | 140 | $= \frac{2 \times 140}{10} = 28$ |
| 2 | (?) | |

[ANSWER : A]

29. $QD = \frac{Q_{13} - Q_1}{2} \therefore QD = \frac{\text{Inter quartile Range}}{2}$

$$\therefore \text{Inter quartile Range} = 2 \times QD.$$

[ANSWER : B]



[ANSWER : C]

31. Here, given Q.C. is

$$ax^2 + bx + c = 0$$

Given, $\beta = 2\alpha$

$$n = 2$$

the condition is

$$\frac{b^2}{ac} = \frac{(n+1)^2}{n}$$

$$\frac{b^2}{ac} = \frac{(2+1)^2}{2}$$

$$\frac{b^2}{ac} = \frac{9}{2} \Rightarrow 2b^2 = 9ac$$

[ANSWER : C]

32. $Y - Z = \{a, e, i\}$

$X \cup (Y - Z) = \{a, b, c, d, e, f, i\}$

[ANSWER : A]

33. $Qd = \frac{Q_3 - Q_1}{2} = \frac{65 - 45}{2} = 10$

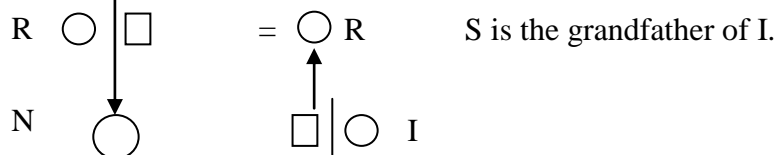
[ANSWER : A]

34. $r_{xy} = 0.5$

$\therefore r_{(2x-4), (3-2y)} = -0.5$

[ANSWER : C]

35. S \square | \circ



[ANSWER : C]

36. $P = \text{Rs. } 5000, i = \frac{0.06}{4} = 0.015, n = 10, PV = ?$

$PV = P \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] \therefore PV = 5000 \left[\frac{(1.015)^{10} - 1}{0.015 (1.015)^{10}} \right]$

$= 46,112.5 \text{ Rs.}$

[ANSWER : A]

37. By trial & error, $x = \pm 1$ and $x = -9$

[ANSWER : A]

38. S.D. of 1st n natural no. $= \sqrt{\frac{n^2-1}{12}}$

$\therefore 2 = \sqrt{\frac{n^2-1}{12}} \therefore 4 = \frac{n^2-1}{12}$

$\therefore n^2 - 1 = 48$

$\therefore n^2 = 49$

$\therefore n = 7$

[ANSWER : C]

39. 2012 is the base year (i.e. zero year)

$\therefore 2018$ is the 6th year. $\therefore x = 6$

$y = 1550 + 25.75x = 1550 + 25.75(6) = 1704.5$

[ANSWER : A]

40. $y = \sqrt[3]{\log x + 3\sqrt{\log x + 3\sqrt{\log x + \dots \infty}}}$

$\therefore y = \sqrt[3]{\log x + y} \therefore y^3 = \log x + y$

$\therefore 3y^2 \cdot y_1 = \frac{1}{x} + y_1 \therefore 3y^2 \cdot y_1 - y_1 = \frac{1}{x}$

$\therefore y_1 (3y^2 - 1) = \frac{1}{x} \therefore y_1 = \frac{1}{x(3y^2-1)}$

[ANSWER : C]

41.

| | | | |
|------|-------|--------|----|
| I(4) | II(5) | III(6) | 15 |
| 2 | 2 | 3 | 7 |
| 2 | 3 | 2 | 7 |
| 3 | 2 | 2 | 7 |

$$\begin{aligned} \text{No. of ways} &= {}^4C_2 \times {}^5C_2 \times {}^6C_3 + {}^4C_2 \times {}^5C_3 \times {}^6C_2 + {}^4C_3 \times {}^5C_2 \times {}^6C_2 \\ &= 6 \times 10 \times 20 + 6 \times 10 \times 15 + 4 \times 10 \times 15 = 2700 \end{aligned}$$

[ANSWER : A]

$$\frac{1}{3} \times \frac{{}^2C_2}{{}^5C_2} + \frac{1}{3} \times \frac{{}^2C_2}{{}^4C_2} + \frac{1}{3} \times \frac{{}^3C_2}{{}^5C_2}$$

$$\begin{aligned} 42. \quad \int_1^e \frac{e^x(x \log x + 1)}{x} dx &= \int_1^e \left(\log x + \frac{1}{x} \right) \cdot e^x dx \\ &= \left[\log x \cdot e^x \right]_1^e = \log e \cdot e^e - \log 1 \cdot e^1 \\ &= 1 \times e^e - 0 \times e \\ &= e^e - 0 = e^e \end{aligned}$$

[ANSWER : B]

43. Total = 120 + 180 + 240 + 180 = 720

| | | | |
|-------------------|-----|-------------------|-----|
| <u>Income Tax</u> | | <u>Wealth Tax</u> | |
| 720 | 360 | 720 | 360 |
| 240 | (?) | 180 | (?) |
| = 120° | | = 90° | |

[ANSWER : A]

44.

| | | | |
|-------------------------|-------------------------|-----------------------------|---|
| <u>x_i</u> | <u>w_i</u> | <u>$x_i w_i$</u> | AM = 10.7 |
| 26 | 1 | 26 | $\therefore \frac{\sum x_i w_i}{\sum w_i} = 10.7$ |
| 28 | 3 | 84 | |
| 12 | 4 | 48 | $\therefore \frac{158+4K}{8+k} = 10.7$ |
| 4 | K | 4K | |
| | | $8 + K$ | $\therefore 158 + 4K = 85.6 + 10.7 K$ |
| | | $158 + 4K$ | $\therefore 72.4 = 6.7 K$ |
| | | | $\therefore K = 10.8$ |

[ANSWER : D]

45. Q R S P T.

S is in the middle.

[ANSWER : A]

46. $Y = \frac{e^{x+1}}{e^{x-1}} \therefore \frac{dy}{dx} = \frac{(e^x-1)(e^x) - (e^{x+1})(e^x)}{(e^{x-1})^2}$

$$\therefore \frac{dy}{dx} = \frac{e^{2x} - e^x - e^{2x} - e^x}{(e^{x-1})^2} = \frac{-2 \cdot e^x}{(e^{x-1})^2}$$

[ANSWER : A]

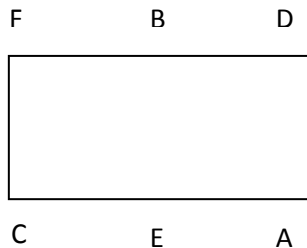
58. $n = 100, p = 0.05 \quad \therefore \text{mean} = np = 100 \times 0.05 = 5$

$$\begin{aligned} \therefore m &= 5 & P(x \leq 4) \\ &= P(0) + P(1) + P(2) + P(3) + P(4) \\ &= e^{-m} \left[1 + m + \frac{m^2}{2} + \frac{m^3}{6} + \frac{m^4}{24} \right] \\ &= e^{-5} \left[1 + 5 + \frac{25}{2} + \frac{125}{6} + \frac{625}{24} \right] \\ &= 0.0067 (65.375) = 0.4380 \end{aligned}$$

[ANSWER : A]

59. (B)

60.



[ANSWER : B]

61. $f \circ g = f[g(x)] = f(2x - 3) = (2x - 3)^2 + 3(2x - 3) + 1$

$$\begin{aligned} &= 4x^2 - 12x + 9 + 6x - 9 + 1 \\ &= 4x^2 - 6x + 1 \end{aligned}$$

[ANSWER : C]

62. $A = \frac{2}{3}B, B = \frac{1}{4}C, \quad A + B + C = 510$

By Trial & Error method, $A = 60, B = 90, C = 360$

[ANSWER : B]

63. (B)

64. (D)

65. L U T E F A T E B L U E
M U T E G A T E C L U E

[ANSWER : A]

66. $\frac{x+y}{6} = \frac{y+z}{7} = \frac{z+x}{8} = k$

$$\therefore x + y = 6k, y + z = 7k, z + x = 8k$$

$$\therefore 6k + 7k + 8k = 2x + 2y + 2z$$

$$\therefore 21k = 2(x + y + z)$$

$$\therefore 21k = 2(14)$$

$$\therefore 21k = 28$$

$$\therefore k = 4/3$$

$$\therefore x + y = 6k = 6(4/3) = 8$$

$$\therefore x + y = 8$$

$$\therefore x + y + z = 14$$

$$\therefore 8 + z = 14$$

$$\therefore z = 6$$

[ANSWER : D]

$$\begin{array}{rcl}
 67. & T_5 = 14 & \therefore a + 4d = 14 \\
 & T_{12} = 35 & \therefore a + 11d = 35 \\
 & & \underline{\quad \quad \quad} \\
 & & -7d = -21
 \end{array}$$

$$\therefore d = 3$$

[ANSWER : B]

$$68. \quad n = 100, p = 0.02, \quad \therefore m = np = 2$$

$$P(x \leq 2) = p(0) + p(1) + p(2)$$

$$= e^{-m} \left[1 + m + \frac{m^2}{2} \right] = e^{-2} [1 + 2 + 2]$$

$$= 5.e^{-2}$$

[ANSWER : C]

69. Group A

$$C.V. = \frac{S.D.}{Mean} \times 100$$

$$= \frac{17}{25} \times 100 = 68\%$$

Group B

$$C.V. = \frac{S}{\bar{x}} \times 100$$

$$= \frac{27}{13} \times 100$$

$$= 207.69\%$$

C.V. of A < C.V. of B

\therefore A is more consistent

[ANSWER : A]

$$70. \quad P \quad \bigcirc \quad + \quad \square \quad R = \square \quad T$$

$$S \quad \bigcirc = \square \quad Q = \square \quad U \quad 4 \text{ male members.}$$

[ANSWER : C]

$$71. \quad \left| x + \frac{1}{4} \right| > \frac{7}{4}$$

$$\therefore x + \frac{1}{4} > \frac{7}{4} \quad \text{or} \quad x + \frac{1}{4} < -\frac{7}{4}$$

$$\therefore x > \frac{6}{4} \quad \text{or} \quad x < -\frac{8}{4}$$

$$\therefore x > 3/2 \quad \text{or} \quad x < -2$$

[ANSWER : B]

$$72. \quad 3 \log x - 4 \log y + 2 \log xy = \log z$$

$$\therefore \log x^3 - \log y^4 + \log (xy)^2 = \log z$$

$$\therefore \log \left[\frac{x^3 \cdot (xy)^2}{y^4} \right] = \log z$$

$$\therefore z = \frac{x^3 \cdot x^2 \cdot y^2}{y^4} = \frac{x^5}{y^2}$$

[ANSWER : D]

$$73. \quad P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= 0.7 + 0.6 - 0.5 = 0.8$$

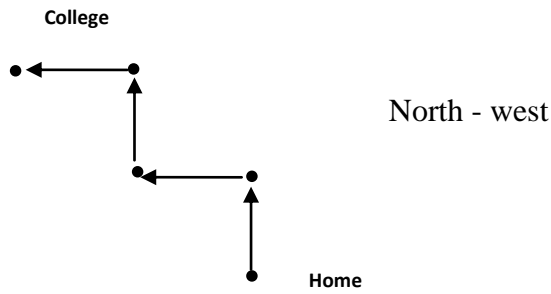
[ANSWER : B]

$$74. \quad 50 \text{ \& 80 occurs two times.}$$

[ANSWER : B]

\therefore Multimodal.

75.



[ANSWER : C]

$$76. \quad \frac{1}{\log_a^m} + \frac{1}{\log_b^m} + \frac{1}{\log_c^m} = \frac{1}{\log_x^m}$$

$$= \log_m^a + \log_m^b + \log_m^c = \log_m^x$$

$$\therefore \log_m^{(abc)} = \log_m^x$$

$$\therefore x = abc$$

[ANSWER : C]

$$77. \quad \text{Here } P \times 0.10 \times 2 = Q [(1.05)^2 - 1] \quad \text{SI} = \text{Pin}$$

$$\therefore 0.20 P = 0.1025 Q \quad \text{CI} = P[(1+i)^n - 1]$$

$$\therefore P = 0.5125 Q = \frac{41}{80} Q$$

[ANSWER : A]

$$78. \quad 96 \text{ per hour} = \frac{96}{60} \text{ per minute} = 1.6 \text{ per minute}$$

$$\therefore m = 1.6$$

$$P(x \leq 3) = P(0) + P(1) + P(2) + P(3)$$

$$= e^{-m} \left[1 + m + \frac{m^2}{2} + \frac{m^3}{6} \right]$$

$$= e^{-1.6} [1 + 1.6 + 1.28 + 0.6827]$$

$$= 0.2019 (4.5627) = 0.92$$

$$P(x \geq 3) = 1 - P(x < 3) = 1 - [P(0) + P(1) + P(2)]$$

$$= 1 - e^{-m} \left[1 + m + \frac{m^2}{2} \right]$$

$$= 1 - 0.2019 (3.88) = 0.2167$$

[ANSWER : D]

$$79. \quad \text{Probability} = \frac{1}{3} \times \frac{{}^2C_2}{{}^5C_2} + \frac{1}{3} \times \frac{{}^2C_2}{{}^4C_2} + \frac{1}{3} \times \frac{{}^3C_2}{{}^5C_2}$$

$$= \frac{1}{3} \times \frac{1}{10} + \frac{1}{3} \times \frac{1}{6} + \frac{1}{3} \times \frac{3}{10}$$

$$= \frac{3+5+9}{90} = \frac{17}{90} = 0.189$$

[ANSWER : A]

$$80. \quad 4 \times 2 + 2 = 10$$

$$10 \times 2 + 2 = 22$$

$$22 \times 2 + 2 = 46$$

\therefore 96 is odd man out.

$$46 \times 2 + 2 = 94 (\neq 96)$$

$$94 \times 2 + 2 = 190$$

$$190 \times 2 + 2 = 382$$

[ANSWER : C]

$$81. S_n = \frac{n}{2} [2a + (n - 1)d]$$

$$S_{10} = \frac{10}{2} [2(5,00,000) + 9(15,000)]$$

$$= 5 [10,00,000 + 1,35,000] = 5 [1135000]$$

$$= 5675000$$

[ANSWER : A]

$$82. \frac{5^{3x} \cdot (3125)^2 \cdot (125)^{-3}}{25^x \cdot 625} = 5^3$$

$$\therefore \frac{5^{3x} \cdot (5^5)^2 \cdot (5^3)^{-3}}{(5^2)^x \cdot 5^4} = 5^3$$

$$\therefore \frac{5^{3x+10-9}}{5^{2x+4}} = 5^3$$

$$\therefore 5^{3x+1-2x-4} = 5^3$$

$$\therefore 5^{x-3} = 5^3$$

$$\therefore x - 3 = 3$$

$$\therefore x = 6$$

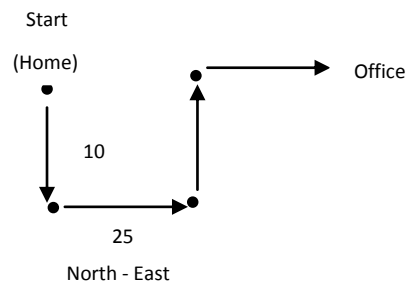
[ANSWER : D]

83. (B)

$$84. b_{yx} = r \cdot \frac{S_y}{S_x} = 0.6 \times \frac{5}{2} = 1.5$$

[ANSWER : C]

85.



[ANSWER : B]

$$86. PV = 20,000, P = 2,000, i = 0.05, n = ?$$

$$PV = P \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right]$$

$$\therefore 20000 = 2000 \left[\frac{(1.05)^n - 1}{0.05(1.05)^n} \right]$$

By Trial & Error, $n \neq 10$ $n \neq 12$ $n \neq 11$

[ANSWER : D]

$$87. {}^5P_4 = 5! = 120$$

[ANSWER : A]

$$88. \text{Prob.} = \frac{39}{52} = \frac{3}{4}$$

[ANSWER : C]

89. $M = 78$ \therefore Median class = 76 – 80

$$M = L + \frac{\frac{n}{2} - cf}{f} \times C \qquad n = 3 + 12 + x + 40 + 32 + 11$$

$$\therefore 78 = 76 + \frac{\frac{n}{2} - (15+x)}{40} \times 4 \qquad \therefore n = 98 + x$$

$$\therefore 2 = \frac{\frac{n}{2} - 15 - x}{10} \qquad \therefore 20 = \frac{n}{2} - 15 - x$$

$$\therefore 35 = \frac{n}{2} - x \qquad \therefore 70 = n - 2x$$

$$\therefore 70 = 98 + x - 2x \qquad \therefore x = 28 \qquad \text{[ANSWER : A]}$$

90. $1 + 5 = 6$

$$6 + 9 = 15$$

$$15 + 13 = \underline{28}$$

$$28 + 17 = 45$$

$$45 + 21 = 66$$

$$66 + 25 = 91 \qquad \text{[ANSWER :D]}$$

91. $x = a, y = ar, z = ar^2$ (\because GP)

$$x^2 + y^2, xy + yz, y^2 + z^2$$

$$= a^2 + a^2r^2, a^2r + a^2r^3, a^2r^2 + a^2r^4$$

$$= a^2(1 + r^2), a^2 \cdot r(1 + r^2), a^2 \cdot r^2(1 + r^2)$$

$$\therefore \text{GP} \qquad \text{[ANSWER : B]}$$

92. $\frac{4}{9} \times \left(\frac{3}{4}\right)^2 \times \left(\frac{2}{3}\right)^3 \times \frac{9}{7} = \frac{4}{9} \times \frac{9}{16} \times \frac{8}{27} \times \frac{9}{7}$

$$= \frac{2}{21} \qquad \text{[ANSWER : C]}$$

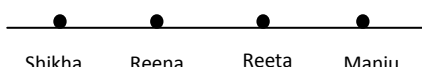
93. $n = 6, p = \frac{1}{2}, q = \frac{1}{2}, P(x \geq 3) = ?$

$$P(3) + P(4) + P(5) + P(6)$$

$$= {}^6C_3 \left(\frac{1}{2}\right)^3 \left(\frac{1}{2}\right)^3 + {}^6C_4 \left(\frac{1}{2}\right)^4 \left(\frac{1}{2}\right)^2 + {}^6C_5 \left(\frac{1}{2}\right)^5 \left(\frac{1}{2}\right)^1 + {}^6C_6 \left(\frac{1}{2}\right)^6 \left(\frac{1}{2}\right)^0$$

$$= \left(\frac{1}{2}\right)^6 [20 + 15 + 6 + 1] = \frac{1}{64} (42) = \frac{21}{32} \qquad \text{[ANSWER : D]}$$

94. Prob. = $0.48 \times 0.48 \times 0.48 = 0.11$ [ANSWER : B]

95.  [ANSWER : C]

96. $i = \frac{0.06}{4} = 0.015, n = 4 \times 4 = 16, P = 500, F.V. = ?$

$$F.V. = P \left[\frac{(1+i)^n - 1}{i} \right] = 500 \left[\frac{(1.015)^{16} - 1}{0.015} \right]$$

$$= 8966.18$$

[ANSWER : A]

97. B C A

[ANSWER : B]

98.

| | |
|--|--------------|
| | <u>W</u> |
| | 1400 |
| | x |
| | y |
| | 560 |
| | 630 |
| | Total = 3500 |

$$= 2590 + x + y$$

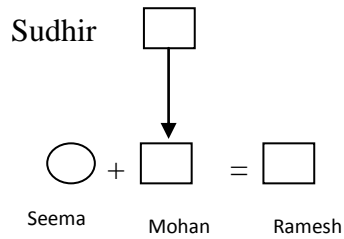
$$\therefore x + y = 910$$

[ANSWER : A]

99. (A)

[ANSWER : A]

100.



\therefore Seema is wife of Mohan.

[ANSWER : D]