and, 22 + 27 = 49

$\therefore \quad x_1 = \frac{22}{6} = \frac{11}{3} = 3.67$, $x_2 = \frac{27}{6} = \frac{9}{2} = 4.5$

$5y^2 + 17y + 14 = 0$

/ \

5 7×2

and, 10 + 7 = 17

$\therefore \quad y_1 = \frac{-10}{5} = -2$, $y_2 = \frac{-7}{5} = -1.4 \quad \therefore \; x > y$

12. (a); $x = (1331)^{1/3} = 11$

$2y^2 - 17y + 36 = 0$

/ \

2×1 9×4

and, 9 + 8 = 17

$\therefore \quad y_1 = \frac{9}{2} = 4.5$, $y_2 = \frac{8}{2} = 4 \quad \therefore \; x > y$

13. (b); I. $x_1 = \frac{-2}{2} = -1$, $x_2 = \frac{-1}{2} = -0.5$

II. $y_1 = \frac{-4}{12} = -0.33$, $y_2 = \frac{-1}{4} = -0.25 \quad \therefore \; y > x$

14. (b); eq(i) × 4 + eq(ii) × 3.

$$\begin{array}{l} 28x - 12y = 52 \\ \underline{15x + 12y = 120} \\ 43x = \quad 172 \end{array}$$

x = 4 , Put it in equation (i)

$3y = 28 - 13 \Rightarrow y = 5 \quad x < y$

15. (b); eq^n (1) × 5 – eq (2) × 2

$$10x + 25y = 30$$
$$10x + 22y = 18$$
$$- \quad - \quad -$$
$$3y = 12$$

y = 4

∴ 5x = 9 – 44 , x = –7; x < y

16. (a); $6x^2 + 29x + 35 = 0$

/ \

3 × 2 7 × 5

and, 14 + 15 = 29

$$\therefore\ x_1 = \frac{-14}{6} = \frac{-7}{3} = -2.33,\ x_2 = \frac{-15}{6} = \frac{-5}{2} = -2.5$$

$3y^2 + 19y + 30 = 0$

/ \

3 × 1 10 × 3

and, 10 + 9 = 19

$$\therefore\ y_1 = \frac{-10}{3} = -3.33,\ y_2 = \frac{-9}{3} = -3;\ \therefore\ x > y$$

17. (a); $35x + 70 = 0$, $x = \frac{-70}{35} = -2$

$3y = -7 \Rightarrow y = -2.3$; ∴ x > y

18. (d); $x^2 - 5x + 6 = 0$

/

3 × 2 and, 3 + 2 = 5

∴ $x_1 = 3$, $x_2 = 2$

$2y^2 - 15y + 27 = 0$

\ /

2 × 1 9 × 3

CAREER POWER™ IIT/IIM ALUMNI COMPANY

and, 9 + 6 = 15

$\therefore \quad y_1 = \frac{9}{2} = 4.5$, $y_2 = \frac{6}{2} = 3$; $\therefore \quad x \le y$

19. (d); $2x^2 + x - 1 = 0 \Rightarrow x_1 = \frac{1}{2}$, $x_2 = -1$

$2y^2 - 3y + 1 = 0 \Rightarrow y_1 = \frac{1}{2}$, $y_2 = 1$; $\therefore x \le y$

20. (e); $eq^n(1) \times 5 - eq^n(2) \times 8$

$40x + 35y = 135 \times 5$

$40x + 48y = 99 \times 8$

$- \quad - \quad -$

$-13y = 135 \times 5 - 99 \times 8$

$13y = 117 \Rightarrow y = 9$

Put it in $eq^n(1)$

$8x = 135 - 63 = 72 \Rightarrow x = 9$; $\therefore \quad x = y$

21. (e); $x^2 = 64 \Rightarrow x = \pm 8$

$2y^2 + 25y + 72 = 0$

\ /

$2 \times 1 \qquad 9 \times 8$

and, 16 + 9 = 25

$\therefore \quad y_1 = \frac{-16}{2} = -8$, $y_2 = \frac{-9}{2} = -4.5$

$\therefore$ relation can'be established

22. (a); eq^n (1) × 2 – eq^n (2) × 7

$$14x + 6y = 52$$
$$14x + 119y = -287$$
$$- \quad - \quad +$$
$$-113y = 339$$

y = –3

put it in eq^n (2)

$2x - 51 = -41 \Rightarrow 2x = 10 \Rightarrow x = 5; \ \therefore \ x > y$

23. (c); $x = \sqrt[3]{2197} = 13$

$y^2 = 169 \Rightarrow y = \pm 13; \ x \geq y$

24. (c); $x = \sqrt{1764} = 42$

$y^2 = 1764 \Rightarrow y = \pm 42; \ \therefore \ x \geq y$

25. (b); $3x^2 + 5x - 2 = 0$

6 – 1 = 5

$x_1 = \frac{-6}{3} = -2$, $x_2 = \frac{1}{3}$

$2y^2 - 7y + 5 = 0$

and, 5 + 2 = 7

$\therefore \ y_1 = \frac{5}{2} = 2.5$, $y_2 = \frac{2}{2} = 1$; $\therefore \ x < y$

26. (a); $5x^2 + 2x - 3 = 0$, 5 – 3 = 2

$\therefore \ x_1 = \frac{-5}{5} = -1$, $x_2 = \frac{3}{5} = 0.6$

$2y^2 + 7y + 6 = 0$

and, 4 + 3 = 7

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | Email:ebooks@adda247.com

$\therefore \quad y_1 = \frac{-4}{2} = -2$, $y_2 = \frac{-3}{2} = -1.5$; $\therefore x > y$

27. (b); eqn (1) × 5 – eq^n(2) × 7

$$35x + 20y = 15$$
$$35x + 21y = 21$$
$$- \quad - \quad -$$
$$-y = -6$$

y = 6

put it in eq^n (1)

$7x + 24 = 3 \Rightarrow 7x = -21 \Rightarrow x = -3$; $\therefore x < y$

28. (b); $x^2 + 5x - 6 = 0$

/

1 × 6 and, 6 – 1 = 5

$\therefore x_1 = -6 \Rightarrow x_2 = 1$

$2y^2 - 11y + 15 = 0$

\ /

2 × 1 3 × 5

and, 6 + 5 = 11

$\therefore \quad y_1 = \frac{6}{2} = 3$, $y_2 = \frac{5}{2} = 2.5$

$\therefore \quad x < y$

29. (a); $y = \sqrt[3]{17576} = \sqrt[3]{2 \times 2 \times 2 \times 13 \times 13 \times 13} = 26$

$\therefore \quad 7x = 4 \times 26 + 85 \Rightarrow 7x = 189 \Rightarrow x = 27$

$\therefore \quad x > y$

30. (e); $x^2 - 25 = 0 \Rightarrow x^2 = 25 \Rightarrow x = \pm 5$

$4y^2 - 24y + 35 = 0$

\ /

2×2 7×5

and, $14 + 10 = 24$

$\therefore \quad y_1 = \frac{14}{4} = \frac{7}{2} = 3.5$, $y_2 = \frac{10}{4} = \frac{5}{2} = 2.5$

$\therefore$ Relation can't be established

Moderate

1. (a); $4x^2 - 43x + 105 = 0$

\ /

2×2 $3 \times 5 \times 7$

$28 + 15 = 43$

$\therefore \quad x_1 = \frac{28}{4} = 7$, $x_2 = \frac{15}{4} = 3.75$

$7y^2 - 29y + 30 = 0$

\ /

7×1 $2 \times 3 \times 5$

$14 + 15 = 29$

$y_1 = \frac{14}{7} = 2$, $y_2 = \frac{15}{7} = 2.142$; $\therefore \quad x > y$

2. (d); $x^2 + 13x + 40 = 0$

\ /

1 8×5

$8 + 5 = 13$

$\therefore \quad x_1 = -8, x_2 = -5$

$y^2 + 7y + 10 = 0$

/

5×2 and $5 + 2 = 7$

$\therefore \quad y_1 = -5, y_2 = -2; \; x \le y$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

Adda 247
Govt jobs coaching, now in your Pocket!
Download the Adda 247 App and boost your preparation.
GET IT ON Google Play
Give a missed call on 8099-931-931 to download the App.

ONLINE TEST PROGRAM
to help boost your score in Government Examinations
TIME-BOUND TESTS • DETAILED TEST ANALYSIS
EXPLANATORY SOLUTIONS • ALL INDIA RANKING
STRICTLY BASED ON EXAM PATTERN
Adda 247
Govt. Job in Your Pocket!
COURSES
TEST SERIES
CORRESPONDENCE COURSES
E-LEARNING KIT
CLASSROOM PROGRAM
CART
MY ACCOUNT
ONLINE TEST SERIES
SELECT EXAM
All Courses
SBI (8)
IBPS (25)
Other Bank Exam (18)
SSC (15)
INSURANCE (0)
Bank Special
BANK OF BARODA
10 MOCKS
BOB PO (Scale I) 2017 Online Test Series
₹399
ADD TO CART
BANK OF BARODA
25 TOTAL TEST
• 10 MOCKS
• 15 PRACTICE SET
BOB PO (Scale –I) 2017 Online Test Series with...
₹499
ADD TO CART
NICL-AO (SCALE-I)
COMBO
20 TOTAL TEST
• 10 PRE MOCKS
• 10 MAINS MOCKS
NICL Administrative Officers (Scale I) COMB...
₹599
ADD TO CART
NICL-AO (SCALE-I)
MAINS
10 MAINS MOCKS
NICL Administrative Officers (Scale I) Mains...
₹399
ADD TO CART
NICL-AO (SCALE-I)
PRELIMS
10 PRELIMS MOCKS
NICL Administrative Officers (Scale I) Prelims...
₹399
ADD TO CART
For Adda247 ONLINE TEST | Visit: store.adda247.com

3. (d); $x = \sqrt[3]{2197}$

$x = 13$

$2y^2 - 54y + 364 = 0$

\ /

$2 \times 1 \quad 2 \times 2 \times 13 \times 7$

$26 + 28 = 54$

$\therefore \quad y_1 = \frac{26}{2} = 13$, $y_2 = \frac{28}{2} = 14$; $x \le y$

4. (c); eq^n (1) × 5 – eqn (2) × 8

$65x - 40y = -81 \times 5$

$120x - 40y = -65 \times 8$

$- \quad + \quad +$

$-55x = -81 \times 5 + 65 \times 8$

$-55x = 115 \Rightarrow x = -2.09$

Put it in eq^n (1)

$-13 \times 2.09 + 81 = 8y$

$\therefore \quad y = +ve; \quad \therefore \quad x < y$

5. (c); $x = \sqrt{172}$

$x = 13$ (Approximate)

$y^2 - 29y + 210 = 0$

/

$2 \times 3 \times 5 \times 7$

$\therefore \quad 14 + 15 = 29$

$\therefore \quad y = 14, 15; \quad \therefore \quad x < y$

Note: we don't have to calculate the exact value of $\sqrt{172}$ as it will be less than 14.

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

6. (c); $676x^2 - 1 = 0$

$x^2 = \frac{1}{676}$, $x = \pm\frac{1}{26}$

$y = \frac{1}{\sqrt[3]{13824}}$, $y = \frac{1}{24}$; $\therefore$ $x < y$

7. (e); $2x^2 + 5x - 33 = 0$

/ \

2×1 11×3

$11 - 6 = 5$

$\therefore$ $x_1 = \frac{-11}{2} = -5.5$, $x_2 = \frac{6}{2} = 3$

$y^2 - y - 6 = 0$

/

3×2 and $3 - 2 = 1$

$\therefore$ $y_1 = 3$, $y_2 = -2$

$\therefore$ Relationship can't be established

8. (a); $x^2 + 12x + 36 = 0$

/

$6 \times 6 \rightarrow 6 + 6 = 12$

$x = -6, -6$

$y^2 + 15y + 56 = 0$

/

7×8 and $7 + 8 = 15$

$\therefore$ $y_1 = -7, -8$; $\therefore$ $x > y$

9. (e); $2x^2 - 3x - 35 = 0$

/ \

2×1 7×5

$x_1 = +\frac{10}{2} = 5$, $x_2 = \frac{-7}{2} = -3.5$

$y^2 - 7y + 6 = 0$ $6 + 1 = 7$ $y = 6, 1$

$\therefore$ Relationship can't be established.

10. (b); $12x^2 - 47x + 40 = 0$

/ \

4×3 8×5

$32 + 15 = 47$

$\therefore \quad x_1 = \frac{32}{12} = \frac{8}{3} = 2.66$

$x_2 = \frac{15}{12} = \frac{5}{4} = 1.25$

$4y^2 + 3y - 10 = 0$

/ \

4×1 5×2

$8 - 5 = 3$

$y_1 = \frac{-8}{4} = -2$, $y_2 = \frac{+5}{4} = +1.25$; $\therefore \quad x \geq y$

CAREER POWER™ An IIT/IIM ALUMNI COMPANY

11. (b); $x = \frac{16}{24} = \frac{2}{3} = 0.66$

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

\ /

$3 - 2 = 1$

$\therefore \quad y_1 = \frac{-3}{3} = -1$, $y_2 = \frac{2}{3} = 0.66$; $\therefore \quad x \geq y$

12. (b); $8x^2 - 49x + 45$

/ \

$2 \times 2 \times 2$ 9×5

$40 + 9 = 49$

$\therefore \quad x_1 = \frac{40}{8} = 5$, $x_2 = \frac{9}{8} = 1.1$

$8y^2 - y - 9 = 0$ $9 - 8 = 1$

$\therefore \quad y_1 = \frac{9}{8} = 1.1$, $y_2 = \frac{-8}{8} = -1$; $x \geq y$

13. (c); eq^n (1) – eq^n (2) × 6

$$42x - 17y = -67$$
$$42x - 72y = -156$$
$$- \quad + \quad +$$
$$55y = 89 \qquad y = \frac{89}{55}$$

and x = – ve value

∴ x < y

14. (a); 2.3 x – 20.01 = 0

$$x = \frac{20.01}{2.3} = 8.7$$

$$2.9y = 8.7 \Rightarrow y = \frac{8.7}{2.9} = 3; \ x > y$$

15. (e); $x^2 - 26x + 168 = 0$

/

12 + 14 = 26

∴ x = 12, 14

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

12 + 13 = 25

∴ y = 12, 13

∴ Relationship can't be established

16. (c); $2x^2 + 13x - 7 = 0$

14 – 1 = 13

$$\therefore \quad x_1 = \frac{-14}{2} = -7, \ x_2 = \frac{1}{2} = 0.5$$

$2y^2 - 5y + 3 = 0$

3 + 2 = 5

$$\therefore \quad y_1 = \tfrac{3}{2} = 1.5, \ y_2 = \tfrac{2}{2} = 1; \ \therefore \quad x < y$$

17. (e); $x^2 + 12x + 32 = 0$

/

$8 \times 4 \rightarrow 8 + 4 = 12$

$\therefore \quad x = -8, -4$

$2y^2 + 15y + 27 = 0$

\ /

$2 \times 1 \qquad 9 \times 3$

$9 + 6 = 15$

$\therefore \quad y_1 = \frac{-9}{2} = -4.5$, $y_2 = \frac{-6}{2} = -3$

$\therefore$ Relationship can't be established.

18. (e); $x^2 - 82x + 781 = 0$

/

71×11

$71 + 11 = 82$

$x = +71, 11$

$y^2 = 5041, y = \pm 71$

$\therefore$ Relationship can't be established.

19. (d); $3x^2 - 7x - 20 = 0$

/ \

$3 \times 1 \qquad 5 \times 4$

$12 - 5 = 7$

$\therefore \quad x_1 = \frac{12}{3} = 4$, $x_2 = \frac{-5}{3} = -1.66$

$y^2 - 8y + 16 = 0$

$4 + 4 = 8$

$\therefore \quad y = 4; \quad \therefore \quad x \le y$

20. (a); $9x^2 - 114x + 361 = 0$

/ \

$3 \times 3 \qquad 19 \times 19$

$57 + 57 = 114$

$\therefore \quad x = \frac{57}{9} = 6.33$

$y^2 = 36, y = \pm 6; \quad \therefore \quad x > y$

21. (c); $9x^2 - 29x + 22 = 0$

/ \

3×3 11×2

$18 + 11 = 29$

$\therefore \quad x_1 = \frac{18}{9} = 2, x_2 = \frac{11}{9} = 1.22$

$y^2 - 7y + 12 = 0$

/

$4 \times 3 \rightarrow 4 + 3 = 7$

$y = 4, 3 \quad \Rightarrow \quad x < y$

22. (d); $3x^2 - 4x - 32 = 0$

/ \

3×1 8×4

and, $12 - 8 = 4$

$\therefore \quad x_1 = \frac{12}{3} = 4, x_2 = \frac{-8}{3} = -2.66$

$2y^2 - 17y + 36 = 0$

\ /

2×1 9×4

$9 + 8 = 17$

$y_1 = \frac{9}{2} = 4.5, y_2 = \frac{8}{2} = 4, \quad x \le y$

23. (e); $x^2 + 14x + 49 = 0$

/

7×7 and, $7 + 7 = 14$

$\therefore \quad x = -7$

$y^2 + 9y = 0 \Rightarrow y(y + 9) = 0$

$\Rightarrow \quad y = -9, \quad y = 0$

$\therefore$ Relationship can't be established.

24. (c); $35x^2 - 53x + 20 = 0$

/ \

7×5 5×4

and, 28 + 25 = 53

$\therefore \quad x_1 = \frac{28}{35} = \frac{4}{5} = 0.8$, $x_2 = \frac{25}{35} = \frac{5}{7} = 0.7$

$56y^2 - 97y + 42 = 0$

/ \

8 × 7 7 × 6

and, 48 + 49 = 97

$\therefore \quad y_1 = \frac{48}{56} = \frac{6}{7} = 0.85$, $y_2 = \frac{49}{56} = \frac{7}{8} = 0.87$

$\therefore \quad x < y$

25. (a); $x = \sqrt[3]{4913} = 17$

$13y + 51 = 246 \Rightarrow y = 15 \quad \therefore \; x > y$

26. (e); $x^2 = 3481 \Rightarrow x = \pm 59$

$3y^2 = \sqrt[3]{216000} = 60 \Rightarrow y^2 = 20$

$y = \pm 2\sqrt{5}$

Relationship can't be established b/w x and y.

27. (a); $20x^2 - 67x + 56 = 0$

/ \

5 × 4 8 × 7

and, 35 + 32 = 67

$\therefore \quad x_1 = \frac{35}{20} = \frac{7}{4} = 1.75$, $x_2 = \frac{32}{20} = 1.6$

$56y^2 - 67y + 20 = 0$

/ \

8 × 7 5 × 4 and, 32 + 35 = 67

$y_1 = \frac{32}{56} = \frac{4}{7} = 0.57$, $y_2 = \frac{35}{56} = \frac{5}{8} = 0.625$; $\quad \therefore \; x > y$

28. (d); $x^2 = 14641 \Rightarrow x = \pm 121$

$y = \sqrt{14641} = 121$; $\therefore$ $x \le y$

29. (b); $x^2 + 42 = 13x$

$x^2 - 13x + 42 = 0$

/

7×6 and, $7 + 6 = 13$

$x = 7, 6$

$y = \sqrt[4]{1296} \Rightarrow \therefore$ $y = 6$; $\therefore$ $x \ge y$

30. (c); $15x^2 - 46x + 35 = 0$

\ /

5×3 7×5

and, $25 + 21 = 46$

$\therefore$ $x_1 = \frac{25}{15} = \frac{5}{3} = 1.66$, $x_2 = \frac{21}{15} = \frac{7}{5} = 1.4$

$4y^2 - 15y + 14 = 0$

/ \

2×2 7×2

and, $8 + 7 = 15$

$\therefore$ $y_1 = \frac{8}{4} = 2$, $y_2 = \frac{7}{4} = 1.75$ $\therefore$ $y > x$

Difficult

1. (a); $7x + 6y + 4z = 122$ ... (i)

$4x + 5y + 3z = 88$ ... (ii)

$9x + 2y + z = 78$ ... (iii)

By equation (iii) × 3 – equation (ii)

$$\begin{array}{ccccccc} 27x & + & 6y & + & 3z & = & 234 \\ 4x & + & 5y & + & 3z & = & 88 \\ - & & - & & - & & - \\ \hline \end{array}$$

$23x + y = 146$... (iv)

By equation (iii) × 4 – equation (i)

$$\begin{array}{rcrcrcr} 36x & + & 8y & + & 4z & = & 312 \\ 7x & + & 6y & + & 4z & = & 122 \\ - & & - & & - & & - \\ \hline \end{array}$$

$29x + 2y = 190$... (v)

By equation (iv) × 2 – equation (v)

$$\begin{array}{rcrcr} 46x & + & 2y & = & 292 \\ 29x & + & 2y & = & 190 \\ - & & - & & - \\ \hline \end{array}$$

$17x = 102$

$x = 6$

from eqn. (iv)

$23 \times 6 + y = 146 \Rightarrow y = 146 - 138 = 8$

From equation (iii)

$9 \times 6 + 2 \times 8 + z = 78$

$\Rightarrow 54 + 16 + z = 78$

$z = 78 - 70 = 8; \Rightarrow x = 6, y = 8, z = 8$

Hence, $x < y = z$

2. (c); By equation (ii) × 2 – equation (i)

$$\begin{array}{rcrcr} 8x & + & 6y & = & 118 \\ 7x & + & 6y & = & 110 \\ - & & - & & - \\ \hline & & x & = & 8 \end{array}$$

from equation (i), $7 \times 8 + 6y = 110$

$\Rightarrow 6y = 110 - 56 = 54 \Rightarrow y = 9$

from equation (iii)

$8 + z = 15 \Rightarrow z = 7$; clearly, $x < y > z$

3. (e); I. $x = \sqrt{(36)^{1/2} \times (1296)^{1/4}} = \sqrt{6 \times 6} = 6$

By equation (ii) × 3 – equation (iii)

$$\begin{array}{ccccc} 6y & + & 9z & = & 99 \\ 6y & + & 5z & = & 71 \\ - & & - & & - \\ \hline \end{array}$$

$4z = 28 \Rightarrow z = 7$

from equation (ii)

$2y + 3 \times 7 = 33 \Rightarrow y = 6$

Hence, none of the above relationships is established.

4. (d); by equation (i) × 5 – (ii) × 8

$$\begin{array}{ccccc} 40x & + & 35y & = & 675 \\ 40x & + & 48y & = & 792 \\ - & & - & & - \\ \hline & & -13y & = & -117 \end{array}$$

$\Rightarrow y = 9$

from equation (i)

$8x + 7 \times 9 = 135 \quad \Rightarrow 8x = 135 - 63 = 72 \Rightarrow x = 9$

from equation (iii)

$9 \times 9 + 8z = 121 \quad \Rightarrow 8z = 121 - 81 = 40 \Rightarrow z = 5$

Clearly $x = y > z$

5. (e); I. $(x + y)^3 = 1331 \quad \Rightarrow x + y = 11 \Rightarrow y = 11 - x$

put it in equation (iii)

$x(11 - x) = 28 \Rightarrow 11x - x^2 = 28$

$x^2 - 11x + 28 = 0 \Rightarrow x^2 - 7x - 4x + 28 = 0$

$x(x - 7) - 4(x - 7) = 0 \Rightarrow (x - 7)(x - 4) = 0$

So, $x = 7, 4$

from equation (i)

$y = 4, 7$

from equation (ii)

$7 - 4 + z = 0, z = -3$ or, $4 - 7 + z = 0, z = 3$

Hence. no relation can be established.

6. (c); By equation (i) × 2 – (ii)

$$\begin{array}{ccccccc} 2x & + & 6y & + & 8z & = & 96 \times 2 \\ & & 2x & + & 8z & = & 80 \\ & & - & & - & & - \\ \hline & & & & 6y & = & 112 \end{array} \qquad y = \frac{112}{6}$$

By equation (iii)

$2x + 6 \times \frac{112}{6} = 120 \qquad \Rightarrow 2x = 8 \Rightarrow x = 4$

By equation (ii)

$8z = 80 - 8 \Rightarrow 8z = 72 \qquad \Rightarrow z = 9$

Hence $x < y > z$

7. (c); I. $\frac{3x}{3x+7} - \frac{3x+7}{3x} = 14$

$$\frac{9x^2 - 9x^2 - 49 - 42x}{9x^2 + 21x} = 14$$

$-49 - 42x = 14 \times 9x^2 + 14 \times 21x$

$-49 - 42x = 126x^2 + 294x$

$126x^2 + 336x + 49 = 0$

Hence $x = -a, -b$

both roots of x are – ve

II. $\frac{y}{18y-5} - \frac{18y-5}{y} = 2 \qquad \frac{y^2 - 324y^2 - 25 + 180y}{18y^2 - 5y} = 2$

$y^2 - 324y^2 - 25 + 180y = 36y^2 - 10y$

$359y^2 - 190y + 25 = 0$

Hence $y = +c, +d$

both roots of y are + ve $\Rightarrow$ $y > x$

GOVT JOB'S COACHING
Adda 247
Govt. Job In Your Pocket
QUIZZES REASONING
DAILY GK QUANT ANALYSIS
JOB ALERTS ENGLISH SESSION
DISC.FORUM THE ANALYZERS
HINDI & ENGLISH GEN. AWARENESS
STUDY ARTICLES LIVE DISCUSSION
CURRENT AFFAIRS CURRENT AFFAIRS QUIZ
LEARNING VIDEOS BANKING SESSIONS
FREE ONLINE COACHING
NOW IN YOUR HANDS
YouTube
Subscribe
Adda 247 CHANNEL
FROM STAR FACULTIES OF BANKERSADDA

VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
Adda 247
more than 200 HOURS of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

8. (e); I. $\frac{x^2+x^2+49+14x}{x^2+7x}=12$

$2x^2 + 49 + 14x = 12x^2 + 84x$

$10x^2 + 70x - 49 = 0 \Rightarrow x = -a, +b$

II. $\frac{y^2+y^2+64+16y}{y^2+8y}=16$

$2y^2 + 64 + 16y = 16y^2 + 128y$

$14y^2 + 112y - 64 = 0 \Rightarrow y = +c, -d$

It is clear that relation cannot be established.

9. (e); I. $\frac{x}{x-11}+\frac{x-11}{x}=7 \Rightarrow \frac{x^2+x^2+121-22x}{x^2-11x}=7$

$2x^2 + 121 - 22x = 7x^2 - 77x$

$5x^2 - 55x - 121 = 0$

Hence $x = -a, +b$

II. $\frac{4y}{4y-13}+\frac{4y-13}{4y}=9$

$16y^2 + 16y^2 + 169 - 104y = (16y^2 - 52y) \times 9$

$32y^2 + 169 - 104y = 144y^2 - 468y$

$112y^2 - 364y - 169 = 0$

Hence $y = +c, -d$

Hence Relation cannot be established.

10. (a); I. $99x^2 + 149x + 56 = 0$

$99x^2 + 77x + 72x + 56 = 0$

$11x(9x + 7) + 8(9x + 7) = 0$

$(9x + 7)(11x + 8) = 0$

$9x+7=0$	$11x+8=0$
$x=\frac{-7}{9}$	$x=\frac{-8}{11}$

II. $156y^2 + 287y + 132 = 0$

$156y^2 + 143y + 144y + 132 = 0$

$13y(12y + 11) + 12(12y + 11) = 0$

$(12y + 11)(13y + 12) = 0$

$12y + 11 = 0$	$13y + 12 = 0$
$y = \frac{-11}{12}$	$y = \frac{-12}{13}$

Hence x > y

11. (b); I. $77x^2 + 58x + 8 = 0$

\ /

$11 \times 7 \quad 4 \times 2$

and, $44 + 14 = 58$

$\therefore x = -\frac{44}{77}, -\frac{14}{77} \Rightarrow x = -\frac{4}{7}, -\frac{2}{11}$

CAREER POWER™ FROM ALUMNI COMPANY

II. $42y^2 + 59y + 20 = 0$

\ /

$7 \times 6 \quad 5 \times 4$

also, $35 + 24 = 59$

$\therefore y = -\frac{35}{42}, -\frac{24}{42} \Rightarrow y = -\frac{5}{6}, -\frac{4}{7}$

Hence, $x \geq y$

12. (a); I. $63x^2 + 172x + 117 = 0$

\ /

$9 \times 7 \quad 13 \times 9$

also, $91 + 81 = 172$

$x = -\frac{91}{63}, -\frac{81}{63} \Rightarrow x = -\frac{13}{9}, -\frac{9}{7}$

II. $30y^2 + 162y + 216 = 0$

\ /

6×5 $36 \times 3 \times 2$

also, $90 + 72 = 162$

$$y = -\frac{90}{30}, -\frac{72}{30} \Rightarrow y = -3, -2.4$$

Hence $x > y$

13. (e); I. $36x^4 + 369x^2 + 900 = 0$

let $x^2 = p$

$36p^2 + 369p + 900 = 0$

\ /

12×3 75×12

also, $144 + 225 = 369$

$$p = \frac{-144}{36}, \frac{-225}{36}$$

so, $x^2 = \frac{-144}{36}, x^2 = \frac{-225}{36}$

imaginary roots $\Rightarrow$ relation cannot be extablished.

14. (e); I. $18x^2 - 13\sqrt{7}x + 14 = 0$

\ /

9×2 2×7

also, $-9\sqrt{7} - 4\sqrt{7} = -13\sqrt{7} \Rightarrow x = \frac{9\sqrt{7}}{18}, \frac{4\sqrt{7}}{18}$

II. $32y^2 - 19\sqrt{6}y + 9 = 0$

\ /

16×2 3×3

also, $-16\sqrt{6} - 3\sqrt{6} = -19\sqrt{6} \Rightarrow y = \frac{16\sqrt{6}}{32} \frac{3\sqrt{6}}{32}$

Relation cannot be established.

15. (e); I. $x^2 - 82x + 781 = 0$

\ /

1 71×11

also, $-71 - 11 = -82$

$x = 71, 11$

II. $y^2 - 5041 = 0 \Rightarrow y^2 = 5041 \Rightarrow y = +71, -71$

Hence, relation cannot be established.

16. (e); I. $36x^2 + 47\sqrt{7}x + 105 = 0$

\ /

9×4 $7 \times 3 \times 5$

also, $27\sqrt{7} + 20\sqrt{7} = 47\sqrt{7}$

$$x = \frac{-27\sqrt{7}}{36}, \frac{-20\sqrt{7}}{36}$$

II. $35y^2 + 20\sqrt{3}y + 63\sqrt{2}y + 36\sqrt{6} = 0$

$$5y\left(7y + 4\sqrt{3}\right) + 9\sqrt{2}\left(7y + 4\sqrt{3}\right) = 0$$

$$\left(5y + 9\sqrt{2}\right)\left(7y + 4\sqrt{3}\right) = 0$$

$$y = \frac{-9\sqrt{2}}{5}, \quad y = \frac{-4\sqrt{3}}{7}$$

Hence, relation cannot be established.

17. (e); I. $91x^2 + 298x + 187 = 0$

\ /

7×13 17×11

also, $77 + 221 = 298$

$$x = \frac{-77}{91}, \frac{-221}{91}$$

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

II. $247y^2 + 216y - 391 = 0$

\ /

13×19 17×23

also, $-221 + 437 = 216$

$$y = \frac{221}{247}, -\frac{437}{247}$$

Hence, relation cannot be established.

18. (e); According to sign method.

Relation cannot be established.

19. (e); I. $391x^2 + 1344x + 1073 = 0$

\ /

17×23 29×37

also, $493 + 851 = 1344$

$$x = \frac{-493}{391}, \frac{-851}{391}$$

CAREER POWER™ AN IIT ALUMNI COMPANY

II. $437y^2 + 1074y + 589 = 0$

\ /

19×23 19×31

also, $361 + 713 = 1074$

$$y = \frac{-361}{437}, \frac{-713}{437}$$

Hence relation cannot be established,

20. (c); $y > x$ (according to sign method).

Previous Year (Memory Based)

1. (e); $x = \sqrt[3]{357911} = 71$

$y = \sqrt{5041} \Rightarrow y = 71; \therefore x = y$

2. (b); $3x^2 + 15x + 18 = 0$

/ \

3×1 6×3

$9 + 6 = 15$

$\therefore x_1 = \frac{-9}{3} = -3, \quad x_2 = \frac{-6}{3} = -2$

$2y^2 + 15y + 27 = 0$

/ \

2×1 9×3

$9 + 6 = 15$

$\therefore y_1 = \frac{-9}{2} = -4.5, y_2 = \frac{-6}{2} = -3; \therefore x \geq y$

3. (b); $2x^2 - 4x - \sqrt{13}x + 2\sqrt{13} = 0$ $2x(x-2) - \sqrt{13}(x-2) = 0$

$(x-2)(2x - \sqrt{13}) = 0 \Rightarrow x = 2, \frac{\sqrt{13}}{2}$

$10y^2 - 18y - 5\sqrt{13}y + 9\sqrt{13} = 0$

$2y(5y-9) - \sqrt{13}(5y-9) = 0$

$(2y - \sqrt{13})(5y-9) = 0 \Rightarrow y = \frac{9}{5}, \frac{\sqrt{13}}{2}; \quad \therefore x \geq y$

4. (d); $821x^2 - 757x^2 = 256$

$64x^2 = 256 \Rightarrow x^2 = \frac{256}{64} \Rightarrow x^2 = 4 \Rightarrow x = \pm 2$

$\sqrt{196}\, y^3 - 12y^3 = 16 \Rightarrow 14y^3 - 12y^3 = 16$

$2y^3 = 16 \Rightarrow y^3 = 8 \Rightarrow y = 2; \therefore x \leq y$

5. (e); $13x - 21 = 200 - 4x$ $17x = 221 \Rightarrow x = 13$

$y = \sqrt[3]{2197} \Rightarrow y = 13;\ \therefore\ x = y$

6. (c); $y = 56$

$\therefore\ (x + 56)^2 = 3136$

$x + 56 = \pm 56 \Rightarrow x = 0, -112 \Rightarrow x < y$

7. (b); $x^2 = 49 \Rightarrow x = \pm 7$

$y^2 + 15y + 56 = 0$

/

7×8 and, $7 + 8 = 15$

$\therefore\ y = -7, -8;\ \therefore\ x \geq y$

8. (e); $7x^2 + 16x - 15 = 0$

/ \

7×1 5×3

and, $21 - 5 = 16$

$\therefore\ x_1 = -\frac{21}{7} = -3,\ x_2 = +\frac{5}{7} = 0.71$

$y^2 - 6y - 7 = 0$

\

7×1 and, $7 - 1 = 6$

$\therefore\ y_1 = 7,\ y_2 = -1$

$\therefore$ We can't estabilish any relationship between x and y.

9. (e); $\frac{15}{\sqrt{x}} - \frac{9}{\sqrt{x}} = \sqrt{x} \Rightarrow x = 6$

$y^{10} = (36)^5 \Rightarrow y^{10} = (6)^{10} \Rightarrow y = 6 \quad \therefore\ x = y$

10. (e); $\sqrt{441}\,x^2 - 111 = (15)^2 \Rightarrow 21x^2 = 225 + 111$

$x^2 = \frac{336}{21} \Rightarrow x^2 = 16 \Rightarrow x = \pm 4$

$\sqrt{121}y^2 + (6)^3 = 260 \Rightarrow 11\,y^2 = 260 - 216$

$y^2 = 4 \Rightarrow y = \pm 2$

$\Rightarrow$ Relationship can't be established.

Adda 247
VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than
200
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Adda 247
VIDEO COURSE
by India's Top Faculties
for Bank Exams
Banking Complete Video Course
(Available in English & Hindi)
more than
150
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

11. (c); $x = \sqrt[3]{2744} \Rightarrow x = 14$

$y = \sqrt{487} \Rightarrow y =$ Approximate (22); $\therefore$ $x < y$

12. (c); $15x^2 - 41x + 14 = 0$

/ \

5×3 7×2

and, $35 + 6 = 41$

$\therefore$ $x_1 = \frac{35}{15} = 2.33$, $x_2 = \frac{6}{15} = \frac{2}{5} = 0.4$

$2y^2 - 13y + 20 = 0$

/ \

2×1 5×4

and, $8 + 5 = 13$

$\therefore$ $y_1 = \frac{8}{2} = 4$, $y_2 = \frac{5}{2} = 2.5$ $\therefore$ $x < y$

CAREER POWER™ IIM ALUMNI COMPANY

13. (e); $x^2 - 8\sqrt{3}x + 45 = 0$

|

$5\sqrt{3} \times 3\sqrt{3}$

and, $5\sqrt{3} + 3\sqrt{3} = 8\sqrt{3}$

$\therefore$ $x = 5\sqrt{3}, 3\sqrt{3}$

$y^2 - \sqrt{2}y - 24 = 0$

|

$4\sqrt{2} \times 3\sqrt{2}$

and, $4\sqrt{2} - 3\sqrt{2} = \sqrt{2}$

$\therefore$ $y_1 = 4\sqrt{2}$, $y_2 = -3\sqrt{2}$

Hence, relationship can't be established.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

14. (b); $x - 7\sqrt{2x} + 24 = 0$

$x - 4\sqrt{2x} - 3\sqrt{2x} + 24 = 0$

$\sqrt{x}(\sqrt{x} - 4\sqrt{2}) - 3\sqrt{2}(\sqrt{x} - 4\sqrt{2}) = 0$

$\therefore \quad (\sqrt{x} - 3\sqrt{2})(\sqrt{x} - 4\sqrt{2}) = 0$

$\therefore \quad \sqrt{x} = 3\sqrt{2} \Rightarrow x = 9 \times 2 = 18$

or, $x = (4\sqrt{2})^2 \Rightarrow x = 32$

$y - 5\sqrt{2y} + 12 = 0 \Rightarrow y - 3\sqrt{2y} - 2\sqrt{2y} + 12 = 0$

$\sqrt{y}\left(\sqrt{y} - 3\sqrt{2}\right) - 2\sqrt{2}\left(\sqrt{y} - 3\sqrt{2}\right) = 0$

$\left(\sqrt{y} - 2\sqrt{2}\right)\left(\sqrt{y} - 3\sqrt{2}\right) = 0$

$\therefore \quad y = 8, \quad y = 18 \quad \therefore \; x \geq y$

15. (e); $63x - 94\sqrt{x} + 35 = 0$

/ \

$9 \times 7 \qquad 7 \times 5$

and, $45 + 49 = 94$

$\therefore \quad \sqrt{x_1} = \frac{45}{63} = \frac{5}{7} \Rightarrow x_1 = \frac{25}{49}$

$\sqrt{x_2} = \frac{49}{63} \Rightarrow \sqrt{x_2} = \frac{7}{9} \Rightarrow x_2 = \frac{49}{81}$

$32y - 52\sqrt{y} + 21 = 0$

/ \

$8 \times 4 \qquad 7 \times 3$

and, $24 + 28 = 52$

$\therefore \quad \sqrt{y_1} = \frac{24}{32} = \frac{3}{4} \Rightarrow y_1 = \frac{9}{16}$

$\sqrt{y_2} = \frac{28}{32} = \frac{7}{8} \Rightarrow y_2 = \frac{49}{64}$

$\therefore$ No relationship b/w x and y can be established.

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

16. (a); $x^2 - 7\sqrt{3}x + 35\sqrt{15} = 5\sqrt{5}x$

$x^2 - 7\sqrt{3}x - 5\sqrt{5}x + 35\sqrt{15} = 0$

$x(x - 7\sqrt{3}) - 5\sqrt{5}(x - 7\sqrt{3}) = 0$

$(x - 5\sqrt{5})(x - 7\sqrt{3}) = 0 \Rightarrow x = 5\sqrt{5}, 7\sqrt{3}$

$y^2 - 5\sqrt{5}y + 30 = 0$

$y^2 - 3\sqrt{5}y - 2\sqrt{5}y + 30 = 0$

$y\left(y - 3\sqrt{5}\right) - 2\sqrt{5}\left(y - 3\sqrt{5}\right) = 0$

$\left(y - 2\sqrt{5}\right)\left(y - 3\sqrt{5}\right) = 0 \Rightarrow y = 2\sqrt{5}, 3\sqrt{5}$; $x > y$

17. (a); $\sqrt{25}x + \sqrt{16}y = 41 \Rightarrow 5x + 4y = 41$ ... (i)

$\sqrt{16}x + \sqrt{25}y = 40 \Rightarrow 4x + 5y = 40$ ... (ii)

eq^n (i) × 4 – eq^n(ii) × 5

$20x + 16y = 164$

$20x + 25y = 200$

$- \quad - \quad -$

$-9y = -36$

$y = 4$

put the value of y in eq^n (ii)

$4x + 20 = 40 \Rightarrow 4x = 20 \Rightarrow x = 5$; $\therefore$ $x > y$

18. (c); $\sqrt{x} = \dfrac{(18)^{15/2}}{x^2}$

$(x)^{2+\frac{1}{2}} = (18)^{15/2} \Rightarrow (x)^{5/2} = (18)^{15/2}$

$(x)^{5/2} = [(18)^3]^{5/2} \Rightarrow x = 18^3$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

$$\sqrt{y} = \frac{(19)^{9/2}}{y} \Rightarrow (y)^{3/2} = (19)^{9/2}$$

$$(y)^{3/2} = \left((19)^3\right)^{3/2} \Rightarrow y = (19)^3 \quad \therefore \ (x < y)$$

19. (e); $63x - 194\sqrt{x} + 143 = 0$

/ \

9×7 11×13

also, 117 + 77 = 194

$$\therefore \ \sqrt{x_1} = \frac{117}{63} = \frac{13}{7} \Rightarrow x_1 = \frac{169}{49}$$

$$\text{and, } \sqrt{x_2} = \frac{77}{63} = \frac{11}{9} \Rightarrow x_2 = \frac{121}{81}$$

$99y - 255\sqrt{y} + 150 = 0$

/ \

11×9 15×10

also, 90 + 165 = 255

$$\therefore \ \sqrt{y_1} = \frac{90}{99} = \frac{10}{11} \Rightarrow y_1 = \frac{100}{121}$$

$$\text{and, } \sqrt{y_2} = \frac{165}{99} = \frac{5}{3} \Rightarrow y_2 = \frac{25}{9}$$

$\therefore$ Relationship can't be estabilshed b/w x and y.

20. (c); $x - 7\sqrt{3x} + 36 = 0 \Rightarrow x - 4\sqrt{3x} - 3\sqrt{3x} + 36 = 0$

$\sqrt{x}(\sqrt{x} - 4\sqrt{3}) - 3\sqrt{3}(\sqrt{x} - 4\sqrt{3}) = 0$

$\therefore$ x = 48 x = 27

$y - 12\sqrt{2y} + 70 = 0$ $\quad$ $y - 7\sqrt{2y} - 5\sqrt{2y} + 70 = 0$

$\sqrt{y}\left[(\sqrt{y} - 7\sqrt{2})\right] - 5\sqrt{2}(\sqrt{y} - 7\sqrt{2}) = 0$

y = 50 y = 98; $\quad \therefore \ x < y$

21. (a); $x^2 - 7\sqrt{7}x + 84 = 0 \Rightarrow \quad x^2 - 4\sqrt{7}x - 3\sqrt{7}x + 84 = 0$

$x(x - 4\sqrt{7}) - 3\sqrt{7}(x - 4\sqrt{7}) = 0$

$\therefore \quad (x - 4\sqrt{7})(x - 3\sqrt{7}) = 0 \Rightarrow x = 4\sqrt{7}, 3\sqrt{7}$

$y^2 - 5\sqrt{5}y + 30 = 0$

$y^2 - 3\sqrt{5}y - 2\sqrt{5}y + 30 = 0$

$y(y - 3\sqrt{5}) - 2\sqrt{5}(y - 3\sqrt{5}) = 0$

$\therefore \quad y = 2\sqrt{5}, 3\sqrt{5} \qquad \therefore \quad x > y$

22. (e); $x^2 - 2x - 15 = 0$

/

5×3

also, $5 - 3 = 2$

$\therefore \quad x_1 = 5, -3$

$y^2 + 5y + 6 = 0$

/

3×2

also, $3 + 2 = 5$

$\therefore \quad y = -3, -2$

$\therefore$ Relationship can't be estabiliesed b/w x and y.

23. (b); $x = \sqrt{169} = 13$

$y^2 = 169 \Rightarrow y = \pm 13; \; x \geq y$

24. (e); $x^2 = 25 \Rightarrow x = \pm 5$

$y^2 - 9y + 20 = 0$

/

$5 \times 4 \rightarrow 5 + 4 = 9$

$y = 5, 4$

Relationship can't be estabilished between x and y.

CAREER POWER™ IIT/IIM ALUMNI COMPANY

25. (a); $7x + 3y = 77$ ... (i)

$2x + 5y = 51$ ... (ii)

$eq^n\ 1 \times 2 - eq^n\ 2 \times 7$

$$14x + 6y = 154$$
$$14x + 35y = 357$$
$$\underline{-\quad -\quad -}$$
$$-29y = -203 \qquad y = 7$$

$\therefore\ 2x = 51 - 35 \Rightarrow 2x = 16 \Rightarrow x = 8;\ \therefore\ x > y$

26. (a); $\sqrt{289}\,x - \sqrt{324} = 203$

$17x - 18 = 203 \Rightarrow x = \dfrac{221}{17} = 13$

$\sqrt{484}\,y - \sqrt{225} = 183 \Rightarrow 22y - 15 = 183$

$22y = 198 \Rightarrow y = 9;\ \therefore\ x > y$

27. (c); $679x^2 - 168x^2 = 3066 \Rightarrow 511x^2 = 3066$

$x^2 = \dfrac{3066}{511} \Rightarrow x^2 = 6$

$\sqrt{144}\,y^3 - 9y^3 = 1536 \Rightarrow 12y^3 - 9y^3 = 1536$

$3y^3 = 1536 \Rightarrow y^3 = 512 \Rightarrow y = 8;\ \therefore\ x < y$

28. (a); $3x + 4y = 41 \Rightarrow 3x + 2y = 31$

$\therefore\ 2y = 10 \Rightarrow y = 5;\ 3x = 21 \Rightarrow x = 7 \therefore\ x > y$

29. (e); $3x^2 - 6x - \sqrt{17x} + 2\sqrt{17} = 0$

$3x(x-2) - \sqrt{17}(x-2) = 0$

$(x-2)(3x - \sqrt{17}) = 0 \Rightarrow x = 2, \dfrac{\sqrt{17}}{3}$

$5y^2 - 15y + \sqrt{17}y - 3\sqrt{17} = 0$

$5y(y-3) + \sqrt{17}(y-3) = 0$

$(y-3)(5y+\sqrt{17}) = 0 \Rightarrow y = 3, \frac{-\sqrt{17}}{3}$

$\Rightarrow$ Relationship can't be estabilished.

30. (b); $x^2 - 16x + 63 = 0$

/

$9 \times 7 \rightarrow 9 + 7 = 16$

$\therefore \quad x = 9, 7$

$y^2 - 2y - 35 = 0$

/

$7 - 5 = 2$

$\therefore \quad y = 7, -5$

$\therefore \quad x \geq y$

CAREER POWER™

Inequality Solutions Based on Latest Pattern 2016 – 2017

1. (b); Quantity 1: Let C.P. of both shirts be Rs. 100

Total C.P. = Rs. 200

Total S.P. of both shirts = 1.2 × 100 + 0.9 × 100 = Rs. 210

Overall profit = $\frac{(210-200)}{200} \times 100 = 5\%$

Quantity 2: Let C.P. of one-metre cloth be Rs. x

and S.P. of one-metre cloth be Rs. y

then,

$20y - 20x = 5x \Rightarrow 20y = 25x \Rightarrow \frac{y}{x} = \frac{5}{4}$

Profit% $\frac{(5-4)}{4} \times 100 = 25\%$

Quantity 2 > Quantity 1

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

2. (b); Quantity 1 : Volume of cube left = $7^3 - \pi\left(\frac{7}{2}\right)^2 \times 7$

$= 343 - \frac{22}{7} \times \frac{49 \times 7}{4} = 343 - 269.5$

Quantity 2 : Surface area of cube left

$= 6 \times 7^2 - 2.\pi.\left(\frac{7}{2}\right)^2 + 2\pi\left(\frac{7}{2}\right)7 = 294 - 77 + 154 = 371\ cm^2$

Quantity 2 > Quantity 1

3. (e); Quantity 1: Liters of milk removed = $\frac{1}{5} \times 10 = 2$ ltr.

Liters of water removed = $\frac{1}{5} \times 2.5 = 0.5$ ltr.

$\frac{2+x}{8} = \frac{4}{1} \Rightarrow x = 30$

$\frac{32}{8+y} = \frac{1}{4} \Rightarrow y = 128 - 8 = 120$ ltr.

Quantity 2: 120 ltr

Quantity I = Quantity II.

4. (b); Let, total units of work be 32 units

Then P does 2 units per day.

& Q does 1 unit per day.

Quantity 1:

3 units are done in 2 days.

30 units are done in 20 days.

On 21st day P does 2 units and work get completed.

Quantity 2:

30 units are done in 20 days.

CAREER POWER™ ALUMNI COMPANY

3 units are done in 2 days

30 units are done in 20 days.

On 21st day Q does 1 unit work.

P completes the remaining one unit in another $\frac{1}{2}$ day

Total days = $21\frac{1}{2}$

Quantity 2 > Quantity 1

5. (b);

$\angle ABD = 90°$ (angle in semicircle)

$\angle DBP = 90°$

$\angle BCD = \angle DAB = 40°$

(angle subtended by same arc in same segment)

$\angle BCD + \angle CPB + \angle CBD + \angle DBP = 180°$

$\Rightarrow 40° + 20° + \angle DBC + 90° = 180°$

$\Rightarrow \angle DBC = 30°$

$\angle ADB = 180° - \angle DAB - \angle ABD = 180° - 40° - 90° = 50°$

Quantity 2 > Quantity 1

6. (a); Quantity 1: $12320 = \pi(7x)^2 \times 10x$

$\Rightarrow 12320 = \frac{22}{7} \times 49x^3 \times 10$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | Email:ebooks@adda247.com

$\Rightarrow \quad x^3 = 8 \qquad \Rightarrow \quad x = 2$

Height = 10x = 20 cm.

Quantity 2 : $\frac{1}{3}\pi \times 2^2 \times 3 = \pi \times 2^2 \times h$

$\Rightarrow \quad h = 1$ cm.

Level of kerosene in jar = 1 cm.

Quantity 1 > Quantity 2

7. (c); Quantity 1: $p^2 - 18p + 77 = 0$

$\Rightarrow p^2 - 11p - 7p + 77 = 0$

$\Rightarrow (p - 11)(p - 7) = 0$

$\Rightarrow p = 11, 7$

Quantity 2: $3q^2 - 25q + 28 = 0$

$\Rightarrow 3p^2 - 21q - 4q + 28 = 0$

$\Rightarrow (3p - 4)(q - 7) = 0$

$\Rightarrow q = 7, \frac{4}{3}$

Quantity 1 $\geq$ Quantity 2

8. (b); Quantity 1: Let, speed of current be x m / minute

$$\frac{200}{48 - x} = \frac{200}{48 + x} + 10$$

$\Rightarrow x = 32$ m / min.

Quantity 2: $\dfrac{3 \times 2 \times \frac{22}{7} \times 49}{14} = 66$ m / min

Quantity 2 > Quantity 1.

9. (e); (10m + 15w) 8 = (12m + 8w)10

80m + 120w = 120m + 80w

40m = 40w

and, m = w = 2B

Quantity I $\rightarrow$ 2m + 4w + 18b $\rightarrow$ 2m + 4m + 9m $\rightarrow$ 15m

Quantity II $\rightarrow$ 9m + 3w + 6b $\rightarrow$ 9m + 3m + 3m $\rightarrow$ 15m

$\therefore$ Quantity I = Quantity II

10. (a);

Because Babu does not go G to A and A to O.

Quantity I $\rightarrow$ 200 km / h

Quantity II $\rightarrow$ 197 km / h

$\therefore$ Quantity I > Quantity II

11. (b);

CP	MP	SP
555x	700x	(700x – 68)

$$\therefore \frac{120}{100} \times 555x = 700x - 68$$

666x = 700x – 68

34x = 68

$$x^2 = \frac{48 \times 108}{100}$$

x = 2

$\therefore$ Quantity I $\rightarrow$ CP = 2 × 555 = 1110 Rs.

$\therefore$ Quantity I < Quantity II

12. (b); Let, Manoj and Shubham take 'x' hrs. to complete the work working together.

Let, Manoj does 'm' units per hour.

and Shubham does 'n' units per hour.

ATQ, $m(x + 4.8) = (m + n)x$

or, $4.8\,m = nx$ ...(i)

also,

$n(x + 10.8) = (m + n)x$

or, $10.8n = mx$

or, $mx = 10.8$ ...(ii)

dividing (i) by (ii),

$$\frac{4.8}{x} = \frac{x}{10.8}$$

or, $x^2 = 4.8 \times 10.8$ [This step can be directly applied to these type of questions (Short – cut approach)]

$$x^2 = \frac{48 \times 108}{100}$$

or, $x^2 = \frac{12 \times 4 \times 12 \times 9}{10 \times 10}$

or, $x = \frac{12 \times 3 \times 2}{10}$ = 7.2 hrs.

Quantity 1 < Quantity 2

13. (b); Quantity 1:

Using multiplying factors,

$$x \times \frac{110}{100} \times \frac{1000}{900} \times \frac{90}{100} = 1.1x$$

Profit % = 10%

Quantity 2:

$$SP = CP \times \frac{125}{100} \times \frac{90}{100}$$

or, $SP = CP \times \frac{5}{4} \times \frac{9}{10}$

or, SP = 1.125CP

For this man,

$$\text{Profit\%} = (SP - CP) \times 100 / SP = \frac{(1.125CP - CP)}{1.125CP} \times 100 = 11.11\%$$

Quantity 1 < Quantity 2

14. (a); Quantity 1:

Let original duration and speed be 't' hr. and 's' km / hr. respectively.

ATQ, st = 3000 ... (i)

Also, (s – 1000) (t + 1) = 3000 ... (ii)

$\Rightarrow$ st + s – 100t - 100 = 3000

$\Rightarrow$ 3000 + s – 100t – 100 = 3000

$\Rightarrow$ s – 100t = 100

putting 's' from (i),

$$\frac{3000}{t} - 100t = 100$$

$\Rightarrow$ $100t^2 + 100t - 3000 = 0$

$\Rightarrow$ $t^2 + t - 30 = 0$

$\Rightarrow$ (t + 6) (t – 5) = 0

$\Rightarrow$ t = 5 hr.

Quantity 2:

New speed = $\frac{3}{4}$th of original

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | Email:ebooks@adda247.com

Hence, new time = $\frac{4}{3}$th of original

i.e., $\frac{1}{3}$th of original time = $\frac{20}{60} = \frac{1}{3}$

or, Original time = 1 hr.

Quantity I > Quantity 2

15. (e); Perimeter of smaller wheel = $2\pi.\frac{7}{2} = 7\pi$ cm.

Perimeter of larger wheel = $2\pi.\frac{14}{2} = 14\pi$ cm.

Let both take 'x' revolutions per second,

then, $(7\pi + 14\pi)10x = 1990.50 - 10.5$

or, $x = \frac{198}{21\pi} = \frac{198 \times 7}{21 \times 22} = 3$

speed of smaller = $7\pi \times 3 = 21\pi$ cm./s.

Quantity = Quantity 2

CAREER POWER AN IIT/IIM ALUMNI COMPANY A unit of Adda 247 | bankersadda.com A Unit of Adda247 | Adda 247 Govt. Job in Your Pocket! | sscadda.com A Unit of Adda247

Fulfill your Dream of Government Job visit: careerpower.in

Chapter 16

Data Interpretation

VIDEO COURSES
for Government Exams

Adda 247

From the oldest and most trusted name in Exam Preparation which gave us Career Power, Bankersadda, Sscadda, here is the latest offering – Video Courses that are tailor-made for the Govt. Job aspirants of digital India. Various banking and SSC exams are conducted online with regular changes to exam pattern and level of questions. We understand the changing needs of the students and have devised a unique solution, making preparation easy, cost-effective and efficient.

Video courses for banking and SSC consist of exhaustive video lectures for government exams which are pre-loaded on an SD card. We offer these courses in two variants: [Android Tab + SD-Card] or [SD Card only]. The SD Card can be run on your personal android device as well. The video courses will run on the Adda247 mobile app, the number one App for Bank and SSC exam preparation.

What you get?

VIDEO COURSE

Video Courses are available in:

32 GB Micro SD Card

Android Tablet (SD Card included)

Available Courses

Banking Complete Video Course

Maths Video Course for SSC Exams

Maths + English Video Course for SSC Exams

SSC Complete Video Course

To Purchase visit : elearning.adda247.com

For any query : Call us at +91-90691 42412 • Email us at elearning@adda247.com

Chapter 16

Data Interpretation

What is data interpretation: When data is organized into tables and charts it is done with the purpose of making it meaningful. The objective of data interpretation is to assess whether a student can understand bars and charts and Answer some questions based on them. This act of organizing and interpreting data to get meaningful information under a given set of conditions is Data interpretataion.

About data interpretation: This is the calculation intensive portion, it consists of a myrid of graph. charts and tables and analyze data. The key to crack this area is to quickly Identify the key pieces of information that you will require to work on.

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

Basic key that will help you to solve this topic:

- Calculation
  - Square
  - cube
  - table
  - BODMAS

  15 –20 days calculation
- Percentage
- Profit and loss
- Ratio and proportion
- Average

Types of Data Interpretation:

- Data table
- Line graph
- Pie charts
- Bar graph

- Mixed graph
    - Line with pie chart
    - Table with Bar
    - Table with Line, etc.
- Radar graph
- Triangular graph
- Case study (Puzzle)
    - Venn Diagram
    - Table format

Approch for data interpretation:

- First you look carefully at the table or graph and the direction. Note the years to which, the data refers to and the units. Sometimes the figures may be given in thousands. While the Answer may be millions Resulting in mistakes.
- The level of approximation that can be done is assessed from the choices. If the answer is wide, time should not be wasted in working out exact figures. If the choice 'none of the above exists, a close approximation may be required'.
- Read the question carefully, it will give an indication as to which row and column should be seen. A carefull reading of the question will reveal exactly what is to be done and the units in which the answer is required.
- There may be one or two very large question requiring calculations. Attempt these at the last.
- Revise bar charts, table and line graphs before attempting D.I. question remember that the D.I. section is a scoring one and also time saving.

Data Table: The numbers in the bracket give the maximum marks in each subject.

The following table gives the percentage of marks obtained by seven students in six different subjects in an examination. Study it and answer the question given below it.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

www.yoursmahboob.wordpress.com

Students	Subject (Maximum Marks)					
	Maths (150)	Chemistry (130)	Physics (120)	Geography (100)	History (60)	Computer Science (40)
Golu	90	50	90	60	70	80
Mithi	100	80	80	40	80	70
Suraj	90	60	70	70	90	70
Gapplu	80	65	80	80	60	60
Mahi	80	65	85	95	50	90
Khushi	70	75	65	85	40	60
Sheetal	65	35	50	77	80	80

1. What are the average marks obtained by all the seven students in physics? (Round off two digits after decimal)
(a)77.26 (b) 89.14 (c) 91.37
(d) 96.11 (e) None of these

2. The number of students who obtained 60% or above marks in all subjects is
(a)1 (b) 2 (c) 3
(d) 4 (e) None of these

3. What was the aggregate of marks obtained by suraj in all the six subjects ?
(a)409 (b) 419 (c) 429
(d) 449 (e) None of these

4. In which subject is the overall percentage the best?
(a)Maths (b) Chemistry (c) Physics
(d) History (e) None of these

5. What is the overall percentage of sheetal
(a)52.5% (b) 55% (c) 60%
(d) 63% (e) None of these

CAREER POWER™ AN IIT/NIT ALUMNI COMPANY

Solution 1:

$$\frac{1}{7}\left[\begin{array}{l}(90\%\text{of } 120)+(80\%\text{of } 120)+(70\%\text{of } 120)+(80\%\text{of } 120)+\\(85\%\text{of } 120)+(65\%\text{of } 120)+(50\%\text{of } 120)\end{array}\right]$$

$$=\frac{1}{7}\left[(520\%\text{of } 120)\right]$$

$$=\frac{624}{7}=89.14$$

Solution 2: From the table, it is clear tha that Suraj & Gapplu have 60% or more marks in each of the six subjects.

Solution 3: Aggregate marks obtained by suraj

= [(90% of 150)+(60% of 130)+(70% of 120)+(70% of 100)+(90% of 60)+(70% of 40)]

= [135 + 78 + 84+ 70 + 54 + 28] = 449

Solution 4: We shall find the best overall % with respect to each subject: Mathematics

Solution 5: Aggregate marks obtained by sheetal.

= [(65% of 150)+(35%of 130)+(50% of 120)+(77% of 100) + (80% of 60)+(80% of 40)] = 360

Maximum marks = 600

Overall % = $\frac{360}{600}\times 100$= 60%

Line Graph:

Answer the question based on the given line graph

Following line graph shows the ratio of export to import of company A and company B over the year

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

www.yoursmartbook.wordpress.com

CAREER POWER
AN IIT/IIM ALUMNI COMPANY

1. In how many of the given years were the exports more than the imports for company A?

(a) 2 (b) 3 (c) 4
(d) 5 (e) None of these

2. If the imports of company A in 2007 were increased by 40%. What would be the ratio of exports to the increased imports?

(a) 1.20 (b) 1.25 (c) 1.30
(d) 1.35 (e) None of these

3. If the exports of company B in 2008 was Rs 237 Crore, what was the amount of imports in that years ?

(a) 189.6 crore (b) 243 crore (c) 281 crore
(d) 316 crore (e) None of these

4. In 2005, the export of company A was double that of company B. If the imports of company A during the year was 180 crore. What was the approximate amount of imports of company B during that year?

(a)190 crore (b) 210 crore (c) 225 crore
(d) 200 crore (e) None of these

5. In which year were the exports of company A minimum proportionate to its imports.

(a)2008 and 2009 (b) 2010 (c) 2008 and 2010
(d) 2005 and 2007 (e) None of these

Solution 1: required ratio, more than 1 for the years; 2005, 2006 and 2007, ie; for 3 years

Solution 2: In 2007, for company A the ratio of exports to import = 175 : 100

Let exports of company A = 175 x $\Rightarrow$ and imports of company A = 100x

New imports of company = 140% of 100x = 140x

There for requied ratio = $\frac{175x}{140x}$= 1.25

Solution 3: Let import of company B in 2008 = x

Then, $\frac{237}{x} = 1.25 \quad \Rightarrow x = \frac{237}{1.25} \Rightarrow$ 189.6 crore

Solution 4: In 2005 for company A $\Rightarrow$ Export = 1.75 × 180 crore

in 2005 for company B export = $\frac{1.75 \times 180}{2}$= 157.5 crore,

But $\frac{Ex}{Im} = .75$

Import of company B = $\frac{157.5}{.75}$= 210 crore

Solution 5: 2008 and 2009, A option.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Pie Charts or Circle Graphs:

Distribution of candidate who were enrolled in MBA and the candidate (out of those enrolled) who passed the exam in different institutes

Total number of candidates enrolled = 8550

Total number of candidates who passed the exam = 5700

CAREER POWER

1. What percentage of candidates passed the exam from institute T out of the total no. of candidate enrollled from the same institute?

(a)50% (b) 62.5% (c) 75%
(d) 80% (e) None of these

2. Which institute has the highest % of candidates passed to the candidates enrolled?

(a)Q (b) R (c) V
(d) T (e) None of these

3. The no. of candidates passed from institute S and P together exceeds the no. of candidates enrolled from institutes T and R together by?

(a)228 (b) 279 (c) 399
(d) 407 (e) None of these

4. What is % of candidates passed to the candidate enrolled for institutes Q and R together ?

(a)68% (b) 80% (c) 74%
(d) 65% (e) None of these

5. What is the ratio of candidates passed to the candidates enrolled from institute P ?

(a)9 : 11 (b) 14 : 17 (c) 6 : 11
(d) 9 : 17 (e) None of these

Solution 1: Required % = $\frac{9\% \text{of } 5700}{8\% \text{of} 8550} \times 100$ = 75%

Solution 2: The % of candidates passed to candidates enrolled can be determined for each institute as under.

For Q $\Rightarrow$ $\frac{17\% \text{of } 5700}{15\% \text{of } 8550} \times 100 = 75.56\%$; For

R $\Rightarrow$ $\frac{13\% \text{of } 5700}{10\% \text{of } 8550} \times 100 = 86.67\%$

For T $\Rightarrow$ $\frac{9\% \text{of } 5700}{8\% \text{of } 8550} \times 100 = 75\%$; For

V $\Rightarrow$ $\frac{15\% \text{of } 5700}{12\% \text{of } 8550} \times 100 = 83.33\%$

So the highest of these is 86.67% corresponding to institutes R.

Solution 3: Required Difference = [(16% + 18%) of 5700] – [(8% + 10%) of 8550] = 1938 – 1539 = 399

Solution 4: $\frac{30\% \text{of } 5700}{25\% \text{of } 8550} \times 100 = 80\%$

Solution 5: $\frac{18\% \text{of } 5700}{22\% \text{of } 8550} = \frac{6}{11}$ = 6 : 11

Bar Graph: Percentage profit earned by two companies X & Y over the given years.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

$$\text{Profit \%} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

1. The income of two company X and Y in 2010 were in the rato of 3 : 4. respectively. What is the respective ratio of their expenditures in 2010?

(a)7 : 22 (b) 14 : 19 (c) 15 : 22
(d) 27 : 35 (e) None of these

2. If the expenditure of company Y in 2007 was Rs 220 crore, what was its income in 2007?

(a)Rs. 312 crore (b) Rs. 297 crore (c) Rs. 283 crore
(d) Rs. 275 crore (e) None of these

3. If the expenditures of company X and Y in 2006 were equal and the total income of the two companies in 2006 was Rs 342 crore, what was the total profit of the two company together in 2006?

(a)Rs. 240 crore (b) Rs. 171 crore (c) Rs. 120 crore
(d) Rs. 102 crore (e) None of these

4. The expanditure of company X in the year 2008 was Rs 200 crore and the income of company X in 2008 was the same as its expenditure in 2011. The income of company X in 2011 was?

(a)Rs. 465 crore (b) Rs. 385 crore (c) Rs. 335 crore
(d) Rs. 295 crore (e) None of these

5. If the income of two company were equal in 2009, then what was the ratio of expenditure of company X to that of company Y in 2009?

(a)6 : 5 (b) 5 : 6 (c) 11 : 6
(d) 16 : 15 (e) None of these

Solution 1: $\frac{165\% \text{ of } E_1}{150\% \text{ of } E_2} = \frac{3}{4}$ $\Rightarrow$ Therefore, $\frac{E_1}{E_2} = \frac{15}{22}$ = 15 : 22

Solution 2: 220 + 35% of 220 $\Rightarrow$ 220 + 77 = 297 crore

Solution 3: Let the expenditure of each companies X and Y in 2006 be 100

Then we have 100 + 40 + 100 + 45 = 342 crore $\Rightarrow$ Required profit = $\frac{342}{285} \times 85$ = 102 crore

Solution 4: Expenditure Company X in year 2008 is 200 crore, Then income of company X in year 2008

= 200 + 55% of 200 = 310 crore

Hence, the expenditure of company X in year 2011 is 310 crore,

Therefore, the required income of X in year 2011 = 310 + 50% of 310 = 465 crore

Solution 5: $\frac{150}{100}X = \frac{160}{100}Y$

be the incomes of two companies in 2009; $\frac{X}{Y} = \frac{160}{150} = \frac{16}{15}$ = 16 : 15

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Mixed Graph: Pie Chart breakup shows that number of employees in different department of an organization.

Table shows the percentage of men in each department (Rest one woma

Total number of employess = 1200

Departments	Percentage of Men
IT	35
PRODUCTION	87
HR	25
MARKETING	75
DISTRIBUTION	50
ACCOUNTS	65

CAREER POWER

1. What is the Respective Ratio of the number of men from the marketing department to those from the accounts department

(a)23 : 13 (b) 13 : 9 (c) 27 : 19
(d) 17 : 11 (e) None of these

2. The number of women from the IT department are what percent of the number of men from the same department (Rounded off to two deigits after decimal)

(a)159.38% (b) 190.07% (c) 185.71%
(d) 168.23% (e) None of these

3. The total number of men from all departments together forms what percent of the total no. of employees in the organization?

(a)67% (b) 63% (c) 55%
(d) 58% (e) None of these

4. What is the total number of women from the production department and the HR department together ?

(a)78 (b) 84 (c) 92
(d) 64 (e) None of these

5. Which department has the highest number of women employees
(a)IT (b) marketing (c) Accounts
(d) Distribution (e) None of these

Solution 1: Required Ratio = $\frac{75\times23}{65\times15}=23:13$

Solution 2: Required Percentage = $\frac{65\times100}{35}=185.71\%$

Solution 3: Men in IT = $\frac{20\times35\times1200}{100\times100}=89$, Similarly calculate men from all departements; Total men = 756

Required Percentage = $\frac{756}{1200}\times100\%$ = 63%

Solution 4: Required number of woman = no. of women from production department + number woman from HR department 39 + 45 = 84

Solution 5: From the table, it is clear that IT department has highest number of women emp.

Mixed Graph:

Data Related to human resource of a multinational company (x) which has 145 offices across 8 – countries

Percentage distribution of post-graduate employees across – 8 – countries

Number of employees and respective Ratio male to female across - 8 countries

CAREER POWER™
AN IIT/IIM ALUMNI COMPANY

Countries	Total no. of Employees	Respective ratio of Male and Female emp.
A	2568	5 : 7
B	2880	11 : 5
C	2310	10 : 11
D	3575	3 : 2
E	2054	7 : 6
F	2788	20 : 21
G	3720	8 : 7
H	3360	9 : 5

GOVT JOB'S COACHING
Adda 247
Govt. Job In Your Pocket
FREE ONLINE COACHING
QUIZZES REASONING
DAILY GK QUANT ANALYSIS
JOB ALERTS ENGLISH SESSION
DISC.FORUM THE ANALYZERS
HINDI & ENGLISH GEN. AWARENESS
STUDY ARTICLES LIVE DISCUSSION
CURRENT AFFAIRS CURRENT AFFAIRS QUIZ
LEARNING VIDEOS BANKING SESSIONS
NOW IN YOUR HANDS
YouTube Subscribe
Adda 247 CHANNEL
FROM STAR FACULTIES OF BANKERSADDA

Adda 247
VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than 200 HOURS of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

1. If the number of male post – graduate, employees in country H is 1800 what percent of female employees in that particular country is post graduate?

(a) 76 (b) 74 (c) 72
(d) 64 (e) 68

2. In which of the given countries is percentage of woman employees to number of employees (both male and female) in that country the secon Lowest?

(a)G (b) B (c) E
(d) H (e) D

3. What is the respective ratio between total number of male employees in countries B and H together and total number of female employees. in countries C and D together?

(a) 63 : 52 (b) 51 : 38 (c) 77 : 64
(d) 69 : 44 (e) 57 : 40

4. What is the difference between average number of post graduate employees in countries A, B and D together and Average number of Post-graduate employees in countries F, G, and H together?

(a) 282 (b) 276 (c) 294
(d) 342 (e) 299

5. Which of the given countries has the highest number of average employees per offices?

(a) F (b) H (c) B
(d) C (e) D

Solution 1: Total PG emp = $\frac{3360\times80}{100}=2688$ $\Rightarrow$ Male PG = 1800 $\Rightarrow$

Female PG. emp. = 2688 – 1800 = 888

Total female in country H = $\frac{3360\times5}{14}=1200$ $\Rightarrow$ Required

% F% = $\frac{888}{1200}\times100$= 74%

Solution 2: Required ratio of country

$G = \frac{7}{15} \times 100 = 46.6\%$; $E = \frac{6}{13} \times 100 = 46.15\%$; $B = \frac{5}{16} \times 100$

$= 31.1\%$; $H = \frac{5}{14} \times 100 = 35.7\%$; $D = 40\%$

Hence, 2nd lowest country H

Solution 3: Total male in B and H or girl C and D

Requird Ratio

$$\left(\frac{2880\times11}{16}+\frac{3360\times9}{14}\right):\left(\frac{2310\times11}{21}+\frac{3575\times2}{5}\right)$$

$\Rightarrow$ (1980 + 2160) : (1210 + 1430)

4140 : 2640 $\Rightarrow$ 207 : 132 $\Rightarrow$ 69 : 44

Solution 4: Total PG. emp in A, B and D is:

$$2568\times\frac{75}{100}+\frac{2880\times65}{100}+\frac{3575\times60}{100}$$

1926 + 1872 + 2145 = 5943 $\Rightarrow$ Average Pg in AB & D is =

$\frac{5943}{3} = 1981$

Total PG in F,G and H = 2091+2046+2688 = 6825

Average PG in F.G.H = $\frac{6825}{3} = 2275$ $\Rightarrow$ Required Diff =

2275 –1981 = 294

Solution 5: Average employee/office is

$F = \frac{2788}{17} = 164 \Rightarrow B = \frac{2880}{18} = 160 \Rightarrow H = \frac{3360}{21} = 160 \Rightarrow$

$D = \frac{3575}{22} = 162.5 \Rightarrow C = \frac{2310}{14} = 165$

Hence C is required Answer.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Missing Data Interpretation—

No. Of People	A	B	C	D	E
Principal	—	—	—	—	—
Rate of interest	—	—	10%	—	—
Simple interest for 1st year	—	—	—	—	—
Compound interest	—	—	—	—	—
1st year	—	—	—	—	—
First two year	—	21000	—	—	—
First three year	—	33800	—	—	—
First four year	—	—	—	—	—
Amount 2nd year for compound interest	4624	—	—	—	—
Amount 3rd year for compound	4913	—	—	—	—

CAREER POWER™ A NAM ALUMNI COMPANY

1. If the principal of E is 20% more than the principal of B than , find the principal of E?

(a) 72830 (b) 82320 (c) 76380
(d) 84430 (e) 78340

2. Find the principal of (A) person?

(a)4000 (b) 4096 (c) 3840
(d) 4286 (e) 4300

3. For the person D if the Diff between simple interest and compond interest for the fourth year is 507. If rate of interest of person D is same as person 'B'. Then the principal of (D)?

(a)7000 (b) 7120 (c) 7203
(d) 7224 (e) 7189

4. Find the compound interest for the person (c). For 3 years if th principal of C is the sum of principal of A, E, and D
(a) 24839.212 (b) 28487.312 (c) 30987.889
(d) 32183.789 (e) 29813. 312

Solution 1. To find principal of E, we must know B's principal.

for 2 year C% = 21000 $= P\left[\left(1+\frac{r}{100}\right)^2 - 1\right]$ ...(i)

for 3 year C% = 33800 $= P\left[\left(1+\frac{r}{100}\right)^3 - 1\right]$ ...(ii)

Equation (ii) divide by equation (i)
(ii) and (i)

$$\frac{21000}{33800} = \frac{\left(1+\frac{r}{100}\right)^2 - 1}{\left(1+\frac{r}{100}\right)3 - 1}; \quad \text{let } \frac{r}{100} = x \Rightarrow 210\,[(1+x)^3-1]$$

$= 338\,[(1+x)^2-1]$
$210\,[1+x^3+3x(1+x)-1] = 338\,[1+x^2+2x-1] \Rightarrow 105x^2 + 315x + 315 = 169x + 338 \Rightarrow 105x^2 + 146x - 23 = 0$

$$x = \frac{+15}{105}, \frac{-160}{15}\left(\frac{-161}{105}\text{neglect}\right)\text{coz } (-)$$

Now, $\frac{r}{100} = \frac{15}{105}$ $r = \frac{100}{7} = 14.28\%$ or $14\frac{2}{7}\%$

$$\Rightarrow \text{Find P} = 21000 = P\left[\left(1+\frac{100}{700}\right)^2 - 1\right]$$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

$21000 = P \times \frac{(64-49)}{49} \Rightarrow \frac{21000 \times 49}{15} = P$

68600 = P B's Principal ⇒ E's principal is 20% more than B

So B = 68600 ⇒ E = 82320

Solution 2: for R = $\frac{289 \times 100}{4624}$ = 6.25% ⇒ $4624 = P = \left(1 + \frac{625}{10000}\right)^2$

$\Rightarrow 4624 = \frac{P \times 17 \times 17}{16 \times 16} \Rightarrow \frac{4624 \times 16 \times 16}{17 \times 17} = P$

4096 = P

Solution 3: By question – 1– Rate of interest D = B as we know B = 14.28%

P A

$7^4 \quad 8^4 = 4096$ (forth year amount)

$(7^3 \quad 8^3) = 3584$ (3rd year amount)

$(7^3 \quad 8^3) \times 7$

Comound input only 4th year Amount = 512, Simple interest for the 4th year = 343

Difference = 512 – 343 = 169 ⇒ $169 = 507$

$1 = \frac{507}{169} \Rightarrow {}^4 7 = \frac{507}{169} \times 7^4 = 7203$

Solution 4: Principal of C = A + D + E = 4096 + 7203 + 82320 = 93619

Now C.I. for person 'C' = $93619\left[\left(1 + \frac{10}{100}\right)^3 - 1\right]$ = 30987.889

Missing D.I.: A professor keeps data on students in tabular form on performance and sex of the student. The data is kept on a computer disk,

but unfortunately some of its data has been lost because of a virus. Only the following has been recovered.

	Performance			Total
	Average	Good	Excellent	
Male	—	—	10	—
Female	—	—	—	32
Total	—	30	—	—

An expert committee was formed, which decided that the following facts were self evident.

(1) Half the students were either excellent or good.

(2) 40% of the students were females.

(3) One third of the male students were average.

1. How many students were both female and excellent

(a) 0 (b) 8 (c) 16

(d) 32 (e) None of these

2. How many students are both male and good?

(a)10 (b) 16 (c) 22

(d) 48 (e) None of these

3. Among average students, what is the ratio of male to female?

(a)1 : 2 (b) 2 : 1 (c) 3 : 2

(d) 2 : 3 (e) None of these

4. What proportion of female students are good?

(a)0 (b) 0.25 (c) 0.5 .

(d) 1.0 (e) None of these

5. What proportion of good students are male?

(a)0 (b) 0.73 (c) 0.4

(d) 1.0 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Solution:

- From the table it is given that the number female is 32 and this numbe is 40% of the students. This means that the total no. of students is 80 and the number of males is 48.
- Now in the question we are given that half the students were excellen or good, also, it is given that one third of the male students were average. So the number of male average students is 16.
- (No. of good students + No. of Excellent student) ⇒ 40
- Total good students = 30
- Therefore the number of Excellent Students ⇒ 40 – 30⇒ 10
- Also in the question it is mentioned that 1/3 rd of male students were average, therefore total no. of males students that were good = (~~48~~ 16 – 10) = 22

Now fill the graph

	Performance			Total
	Average	Good	Excellent	
Male	16	22	10	48
Female	24	8	0	32
Total	40	30	10	80

Solution 1: (a); No. of student are both, Female and Excellent = 0

Solution 2: (c); No. of students who are both, Male and good = 22

Solution 3: (d); Ratio male to female among Average student
= 16 : 24 = 2 : 3

Solution 4: (b); Proportion of female student who are good
= 8/32 = 0.25

Solution 5: (b); Proportion of good students who are male = $\frac{22}{30}$ ⇒ 0.73

Radar Graph: The radar chart is a chart that consists of a sequence of equi-angular spokes, called radii, with each spoke representing one of the

variables. The radar chart also known as a spider chart because of its appearance, has its zero starting point in the middle from the middle of each axis of the chart can protrude out like the spokes on a wheel. There can be one axis for each subject. And there is no limit on the no. of subjec that can be used it can also be described as a radial grid with zero startin point being the middle.

Radar Graph

Number of students (in thousands) in two different universities in six different years.

1. What was the difference between the number of students in university 1 in the year 2010 and the number of students in university-2 in the year 2012?

(a)zero (b) 5000 (c) 15000

(d) 10000 (e) 1000

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

2. What is the sum of the number of students in university-1 in the year 2007 and the number of students in university-2 in the years 2011 together?

(a)40000 (b) 55000 (c) 45000
(d) 57000 (e) 40000

3. If 25% of the students in university-2 in the year 2010 were female what was the number of male students in the university - 2 in the same year?

(a)11250 (b) 12350 (c) 12500
(d) 11500 (e) 11750

4. What was the percentage increase in the number of students in university -1 in the year 2011 as compared to the previous year?

(a)135 (b) 15 (c) 115
(d) 25 (e) 35

5. In which year was the difference between the number of students in university-1 and the number of students in university-2 highest?

(a)2008 (b) 2009 (c) 2010
(d) 2011 (e) 2012

CAREER POWER™ AN IIT/NIT ALUMNI COMPANY

Solution 1: Required $\Rightarrow$ 20,000 – 20,000 $\Rightarrow$ 0 (zero)

Solution 2: Required $\Rightarrow$ 30,000 + 10,000 $\Rightarrow$ 40,000

Solution 3: Boys $\Rightarrow$ $15000 \times \frac{75}{100} \Rightarrow 11250$

Solution 4: Required increased Percentage $\frac{5000}{20000} \times 100 \Rightarrow 25\%$

Solution 5: Difference $\Rightarrow$ 2012 higher (shows in figure)

Triangular Bar diagram: A survey was conducted in five cities viz. Pune, Kanpur, Raisen, Surat and Trivandrum for the percentage of people using T (Trains), B (Buses) & C (Cars), as mode of transport. Number of persons surveyed in cities Pune, Kanpur, Raisen, Surat and Trivandrum are 2000, 4000, 6000, 3000 and 8000 respectively.

1. The city, where the least number of Persons use buses is,
(a) Surat (b) Raisen (c) Kanpur
(d) Pune (e) None of these

2. The average number of persons using trains for transportation in Pune Kanpur, Raisen and Trivandrum is
(a)1880 (b) 1750 (c) 1950
(d) 1850 (e) None of these

3. The mode of transport used by the least number of persons in all the given cities
(a)trains (b) buses (c) cars
(d) cars & buses (e) None of these

4. Out of total number of car users in all the cities together, how many cities have less than 30% of car user?
(a)One (b) Two (c) Three
(d) Four (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Solution 1: Number of Persons using buses in
Surat ⇒ 75% of 3000 ⇒ 2250; Raisen ⇒ 50% of 6000 ⇒ 3000; Kanpur ⇒ 50% of 4000 ⇒ 2000
Pune ⇒ 25% of 2000 ⇒ 500; Thus, Pune is the required city

Solution 2: Number of persons using trains in
Pune ⇒ 75% of 2000 ⇒ 1500; Raisen ⇒ 50% of 6000 ⇒ 2000
Kanpur ⇒ 50% of 4000 ⇒ 2000; Trivandrum ⇒ 12.5% of 8000 ⇒ 1000
Thus, required average number

$$=\frac{1500+2000+3000+1000}{4}=\frac{7500}{4}\Rightarrow 1875$$

Solution 3: No. of persons using buses ⇒ 25% of 2000 + 50% of 4000 + 50% of 6000 + 75% of 3000 + 87.5% of 8000
⇒ 14750, No. of persons using trains
⇒ 75% of 2000 + 50% of 4000 + 50% of 6000 + 25% of 3000 12.5% of 8000 = 8250
Number of persons using cars
⇒ 50% of 2000 + 62.5% of 4000 + 37.5% of 6000 + 62.5% o 3000 + 43.75% of 8000 ⇒ 11125
Hence, Trains are used by the least no. of persons in the give cities.

Solution 4: Total no. of cars users = 11125 & 30% of 11125 = 3337.5
Thus, in four cities, the no. of car users is less than 3337.5 i.e less than 30% of the car users. These cities are Pune, Kanpu Raisen, Surat.

<u>Case Studies or Puzzle D.I.</u>

Table (Case Studies) Puzzle (Venn Diagram)

Study the following information carefully to answer the question.

The officer's colony of Badown has 2800 members out of which 650 members read only English newspaper. 500 members read only Hindi newspaper and 450 member read only Marathi newspapers. The number of member reading all the three newspapers is 200. 400 members read Hindi as well as Marathi newspapers only and 300 members read English and as well as Marathi newspaper only and 300 members read English and as well as Hindi newspaper only.

1. How many members read atleast two newspaper?
(a) 1200 (b) 1800 (c) 1500
(d) 1100 (e) None of these

2. Find the number of members reading Hindi newspaper?
(a)750 (b) 980 (c) 1400
(d) 1020 (e) None of these

3. How many members read only one newpaper?
(a)1560 (b) 1600 (c) 1650
(d) 1540 (e) None of these

4. Find the number of members reading atleast three newspaper?
(a)200 (b) 300 (c) 460
(d) 750 (e) None of these

Given information can be easily described by the following venn diagram

Solution 1: From the above venn diagram ⇒ 300 + 300 + 400 + 200 = 120

Solution 2: No. of members reading Hindi newspaper

⇒ 500+300+200+400 = 1400

Solution 3: The number of members reading only one newspaper

⇒ 650 + 500 +450 = 1600

Solution 4: The number of members reading atleast three newspapers = 200

Case Study (Table Formate): Study the information carefully to answer the question that follow.

A. Company produced five different products viz. mobile phone, pen drive, calculators, televisions and washing machines. Total number of all the five products is 1650. 24% of the total number of products is mobile phones. One sixth of the total number of products is Pendrives. 14% of th total number of product is calculators. Remaining products are either television or washing machine; number of washing machine is 50 more than the number of televisions produced.

CAREER POWER
AN IIT/IIM ALUMNI COMPANY

1. What is the difference between the total number of televisions and mobile phones together and the number of calculators produced?

(a)534 (b) 524 (c) 511

(d) 523 (e) None of these

2. Number of televisions produced is approximately what % of the total number of calculators and washing machines produced together?

(a)63% (b) 55% (c) 59%

(d) 51% (e) 67%

3. What is the total number of pen drives, calculator and washing machines produced by the company?

(a)907 (b) 917 (c) 925

(d) 905 (e) None of these

Solution: Total no. of products = 1650 ⇒ Number of mobile phone = 24% of 1650 = 396

Number of pen drive $=\frac{1}{6}$th of 1650 = 275, Number of calculato
= 14% of 1650 = 231

Remaining number of products = 1650 – (396 + 275 + 231) = 7

These remaining products i.e, 748 products are either televisio
or washing machines.

Let the number of washing machine and televisions be x and y respectively then,

x + y = 748; x – y = 50 ⇒ x = 399, y = 349

Now,

Products	Number of products
Mobile phones	396
Pen drives	275
Calculators	231
Washing Machines	399
Televisions	349

Solution 1: Total no. of television & mobile phones together = 396 + 349 = 745

And No. of calculators = 231, Required difference = 745 – 231 = 514

Solution 2: No. televisions = 349 ⇒ Required% $=\frac{349}{630}\times 100\%$ ⇒ 55%

Solution 3: Total no. of pen drives, Calculators & Washing Machines = 275 + 231 + 399 ⇒ 905

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

ONLINE TEST PROGRAM
to help boost your score in Government Examinations
TIME-BOUND TESTS • DETAILED TEST ANALYSIS
EXPLANATORY SOLUTIONS • ALL INDIA RANKING
STRICTLY BASED ON EXAM PATTERN
Adda 247
Govt. Job in Your Pocket!
COURSES
TEST SERIES
CORRESPONDENCE COURSES
E-LEARNING KIT
CLASSROOM PROGRAM
CART
MY ACCOUNT
ONLINE TEST SERIES
SELECT EXAM
All Courses
IBPS (25)
Other Bank Exam (18)
INSURANCE (6)
Bank Special
BANK OF BARODA
NICL-AO
₹399
₹499
₹599
₹399
₹399
ADD TO CART
For Adda247 ONLINE TEST | Visit: store.adda247.com

VIDEO COURSE
by India's Top Faculties
for Bank Exams
Banking Complete Video Course
(Available in English & Hindi)
more than
150
HOURS
of video classes
Adda 247
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Foundation

Directions (1 – 5): Study the following questions and choose the correct answer.

State wise production of different crops for the year 1993-94 (in million tonnes)

State	Rice	Wheat	Pulses
U.P.	7.18	15.97	2.76
W.B.	8.09	0.81	0.35
M.P.	3.67	3.72	2.32
Maharashtra	1.94	0.86	1.11
Haryana	1.36	4.42	0.36
All India	58.64	44.23	12.2

1. W.B. produces approximately what percent of the total rice produced in India?

(a)12.2% (b) 13.5% (c) 18%
(d) 15% (e) None of these

2. The amount of wheat produced by U.P. is more than the amount of wheat produced by the other four states listed in the table, by

(a) 6.97 m tonnes (b) 6.16 m tonnes (c) 5.52 m tonnes
(d) 5.89 m tonnes (e) None of these

3. What percentage of the total wheat production was produced by states other than those who are not given in the table?

(a) 38% (b) 42% (c) 48%
(d) 58% (e) None of these

4. U.P. produced approximately what percent of the all India production of all the three crops take together?

(a)27.75% (b) 26.2% (c) 24.18%
(d) 22.52% (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

5. Which of the following statements is true?
(a) U.P. was the top producer of all the three crops.
(b) M.P. ranked third in the production of all three crops.
(c) Maharashtra was the lowest producer of rice.
(d) Haryana was the lowest producer of wheat.
(e)None of these

Directions (6 – 10): Study the following graph carefully and answer the questions that follow.

Passengers travelling by Various Modes from 1987 to 1992 (In Millions)

6. In 1989, bus passengers represented approximately what percentage of all passengers by buses, railroads, and airlines in that year?
(a) 35% (b) 45% (c) 545%
(d) 65% (e) None of these

7. From 1987 to 1992 (both inclusive), how many millions of passengers approximately travelled by railroad?

(a)1000 (b) 1300 (c) 1500
(d) 1700 (e) None of these

8. If in 1992 the average bus fare per passenger was $ 0.50 and if the average airline fare per passenger was $ 50. What is the ratio betwee total fares of Airline passengers to total fares of bus passengers?

(a) $\frac{6}{5}$ (b) $\frac{30}{1}$ (c) $\frac{60}{1}$
(d) $\frac{90}{1}$ (e) None of these

9. In 1991, if total 25 Airlines are there then what is the average number of passenger being served by each Airline companies?

(a)5 million (b) 4 million (c) 7 million
(d) 9 million (e) None of these

10. The number of railroad passengers in 1992 when compared to the number of railroad passengers in 1987 were less by?

(a)35 (b) 40 (c) 70
(d) 90 (e) None of these

Directions (11 – 15): These questions are based on following pie graph.
Spending Pattern of an Average Worker

spending patterns of hard worker 100% = Rs. 3500

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Spending Pattern of Mr. Hardworker

11. For the categories which are common for both, for which category does Mr. Hard Worker spend more than the average worker?
(a)Rent (b) Durables (c) Semi-durables
(d) Entertainment (e) None of these

12. How much does Mr. Hard worker spends on categories which are not included in the spending pattern of an average worker?
(a)Rs. 100 (b) Rs. 225 (c) 525
(d) Rs. 450 (e) None of these

13. The additional saving of 5% of Mr. Hard worker come from his savings under?
(a)Food (b) Repayment of loans (c) Misc.
(d) Data inadequate (e) None of these

14. If the salary of Mr. Hard worker is increased by 20% and his expenses under all the heads remain the same, what will be his percentage savings?
(a)10% (b) 15% (c) 20%
(d) 25% (e) None of these

15. Which of the following is definitely true?
I. Mr. Hard worker has a smaller family than the average worker.
II. Mr. Hard worker has not borrowed any money.
III. Mr. Hard worker spends less on necessities and more on comforts

(a)I only (b) II only (c) I, II and III only
(d) Data inadaquate (e) None of these

Directions (16 – 20): The following questions are to be answered on the basis of the pie-chart given below.

Person's monthly salary distributed over different expense heads

16. For a person, whose monthly salary is Rs. 6,000 p.m., how many item are there on which he has to spends more than Rs. 1000 p.m.?
(a) 1 (b) 2 (c) 3
(d) 4 (e) None of these

17. For the same person, an expenditure of Rs. 1800 p.m. takes place on
(a)Petrol (b) House Rent (c) Food
(d) Clothes (e) None of these

18. The annual savings for such a person will be approximately?
(a)Rs. 5,000 (b) Rs. 10,000 (c) Rs. 15,000
(d) Rs. 16,560 (e) None of these

19. The monthly salary for a person who follows the same expense pattern, but has a petrol expense for Rs. 500 p.m., is?
(a)Rs. 2,500 (b) Rs. 3,000 (c) Rs. 5,000
(d) Rs. 6,500 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

20. The percentage of money spent on clothes and saving is equal to which other single item of expense?

(a)Petrol (b) House Rent (c) Food
(d) Entertainment (e) None of these

Directions (21 – 25): Study the graph and answer the following questions

Power Supply Position in India (in Billion KWH)

CAREER POWER IIT/IIM ALUMNI COMPANY

21. What was the percentage increase in supply of power between 1980-81 and 1984-85?

(a)56% (b) 145% (c) 43%
(d) 85% (e) None of these

22. The cumulative shortfall between requirement and supply from 1980-81 to the end of 1985 was (in billion Kwh)?

(a)56 (b) 85 (c) 45
(d) 76 (e) None of these

23. The requirement of power in 1984-85 was how many times the availability of supply in 1978-79?

(a)2.6 (b) 1.75 (c) 2.75
(d) 2.0 (e) None of these

24. The percentage of growth in power requirement from 1979-80 to 1984-85 was less than the percentage of growth in power requirement from 1974-75 to 1979-80 by what figure?

(a)3 (b) 4 (c) 15
(d) 7 (e) None of these

25. Between 1979-80 and 1983-84, the power generation has generally lagged behind power demand by how many years?

(a)1 (b) 2 (c) 3
(d) 4 (e) None of these

Directions (26 – 30): Following table shows the selling of different Brand Mobile in different years (Data given in thousands)?

Years→ Brand↓	2006	2007	2008	2009	2010	2011
M	21	21.5	23	27.6	28.2	30
N	18	21	20.4	22.1	24.5	24
O	30	32	27	28	30	28
P	16	12	18.6	18.4	19.8	19
Q	26	21.5	25	24.5	28	30
R	15	12	18	26.5	28.5	28.2

26. What is the difference between the average selling of mobile in year 2010 and that in year 2006?

(a)5300 (b) 5100 (c) 5500
(d) 5400 (e) 5200

27. Selling of Brand O in year 2008 is what percentage of selling of brand R mobile in year 2006?

(a)150% (b) 180% (c) 120%
(d) 240% (e) 200%

28. What is the approximate percentage increase in selling of Brand P mobile in year 2006 to 2009?

(a)12% (b) 15% (c) 20%
(d) 24% (e) 25%

29. In the following years, in which year is total selling of mobile of all Brand is maximum?

(a)2007 (b) 2008 (c) 2009
(d) 2010 (e) 2011

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

30. Selling of Brand N mobile in year 2007 is how much percentage more than the selling of Brand P mobile in the same year?

(a)75% (b) 60% (c) 50%
(d) 25% (e) 20%

Directions (31 – 35): Study the following table and answer the following questions:

Year	BANK							
	M		N		O		P	
	M	F	M	F	M	F	M	F
1994	400	200	450	250	600	350	450	400
1995	150	250	100	400	350	550	600	550
1996	250	400	400	850	500	350	450	650
1997	400	650	150	500	500	650	600	700
1998	300	750	350	600	300	400	400	650

31. What was the ratio of the number of females, in Bank P in the year 1995, the number of male in bank M is the year 1996 and the number of female in Bank N in the year 1995?

(a)11 : 5 : 9 (b) 12 : 5 : 7 (c) 11 : 6 : 8
(d) 12 : 5 : 9 (e) 11 : 5 : 8

32. What was the average number of male employees working in all the Banks together in 1994?

(a)450 (b) 475 (c) 385
(d) 300 (e) None of these

33. If 20 percent of female and 30 percent of male employees in Bank N in year 1994 were handicapped, then what was the total number of handicaped candidates in the Bank in that year?

(a)185 (b) 170 (c) 190
(d) 195 (e) None of these

34. What was the total number of female working in Bank M in the year 1997, females working in Bank N in the year 1995 and male working in Bank P in the year 1996 together?

(a)1600 (b) 1550 (c) 1450
(d) 1400 (e) None of these

35. Total number of female employees working in Bank O over all the year together was approximately what percentage of total number of employees working in the year 1997 in all the Banks?

(a)45 (b) 50 (c) 55
(d) Cannot be determined (e)None of these

Directions (36 – 40): Following Pie-chart show the distribution of differen grade of employees of a Bank and percentage of male among them.

% of different grade employee (Total employee 8000)

% of male (Total male = 3200)

36. What is the ratio of female to male employee in Grade U?
(a)14 : 15 (b) 15 : 16 (c) 11 : 12
(d) 12 : 13 (e) 13 : 14

37. What is the half of difference between male and female employee in Grade R?
(a)288 (b) 128 (c) 186
(d) 172 (e) 224

38. The number of female employees of Grade P is what % of the numbe of male employees of Grade P?
(a)80% (b) 92% (c) 105%
(d) 120% (e) 125%

39. In which grade is the number of female employee the maximum?
(a)P (b) Q (c) R
(d) S (e) T

40. The number of female in Grade S is how much % more than the number of male employee in the same grade?
(a)32% (b) 75% (c) 48%
(d) 112.5% (e) None of these

CAREER POWER
AN IIT/NIT COMPANY

Directions (41 – 45): Study the following table and answer the following questions:

No. of Employees in Different Departments

Department	Males	Female
IT	2	3
HR	7	8
Finance	11	4
Calling	12	13
Marketing	17	8
Production	5	9

41. What is the total number of males in all departments together?

(a)829 (b) 709 (c) 614

(d) 839 (e) None of these

42. What is the difference between total number of male working in HR department and Finance department together and female working in calling department and Production department together?

(a)225 (b) 215 (c) 420

(d) 425 (e) None of these

43. In which department the lowest number of female working?

(a)IT (b) HR (c) Finance

(d) Calling (e) Production

44. What is the respective ratio of male working in calling department to female working in HR department?

(a)3 : 2 (b) 2 : 3 (c) 5 : 8

(d) Cannot determine (e) None of these

45. What is the total number of employees working in all departments together?

(a)1300 (b) 1350 (c) 1450

(e)1554 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | **Email:** ebooks@adda247.com

Directions (46 – 50): Study the following graph carefully to answer the questions:

Quantity of Onion (in hundred tonnes) Purchased by three Dealers over the years

46. The percentage rise in purchase of onions from the previous year was the maximum during which year for dealer Q?

(a)2003 (b) 2004 (c) 2005

(d) 2007 (e) None of these

47. What is the average purchase of Onions by dealer Q for all the years? (in hundred tones rounded off to two digits after decimal)

(a)571.42 (b) 667.14 (c) 766.67

(d) 756.57 (d)None of these

48. Total Onions purchased by dealer P for all the years is approximately what percent of the total onions purchased by dealer Q for all the years?

(a)128 (b) 139 (c) 68
(d) 82.5 (e) 72

49. What is the percent increase in the purchase of onions of dealer R from 2003 to 2007?
(a)150 (b) 133.33 (c) 33.33
(d) 50 (e) None of these

50. What is the ratio of total quantity of onions purchased by all the three dealers in 2002 to that in 2004?
(a)51 : 29 (b) 9 : 40 (c) 29 : 51
(d) 29 : 42 (e) None of these

Moderate

Directions (1 – 5): Study the following table carefully and choose the correct options from the alternatives:-
India's foreign trade for the year 1980-81 to 1986-87 (All figures in Rs. Crores)

Year	Exports	Imports	Trade Deficit
1980-81	6711	12549	5838
1981-82	7806	13608	5802
1982-83	8803	14293	5490
1983-84	9771	15831	6060
1984-85	11855	17173	5318
1985-86	10420	18371	7951
1986-87	12550	20063	7513

1. Which of the following showed an increase every year?
(a)Exprots (b) Imports (c) Trade deficit
(d) All of these (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

2. The ratio of imports to exports was maximum in the year?
(a)1980 – 81 (b) 1985 – 86 (c) 1985 – 86
(d) 1983 – 84 (e) None of these

3. The percentage increase in exports was maximum in the year?
(a)1981 – 82 (b) 1986 – 87 (c) 1984 – 85
(d) 1983 – 84 (e) None of these

4. The total trade deficit (in Rs. crores) for the last five years is?
(a)28508 (b) 32332 (c) 44322
(d) 33232 (e) None of these

5. The difference between imports and exports was maximum in the year?
(a)1985 – 86 (b) 1986 – 87 (c) 1984 – 85
(d) 1983 – 84 (e) None of these

Directions (6 – 10): Study the following graph carefully and answer the questions that follow.

External Public Debt from 1980 to 1986 (in Rs. crore)

6. During the years 1980-82, public debt rose by approximately?
(a) 6% (b) 8% (c) 12%
(d) 15% (e) None of these

7. Public debt rose by _____ (in crores) from 1983 to 1984?
(a)1000 (b) 1200 (c) 1250
(d) 1350 (e) None of these

8. Public debt rose by about 5.3% during the period?
(a)1980 – 81 (b) 1982 – 83 (c) 1983 – 84
(d) 1984 – 86 (e) None of these

9. Increase in public debt was minimum during the period?
(a)1980 – 81 (b) 1981 – 83 (c) 1980 – 84
(d) 1984 – 86 (e) None of these

10. Percentage Increase in public debt was maximm during the period?
(a)1981 – 82 (b) 1982 – 83 (c) 1983 – 84
(d) 1985 – 86 (e) None of these

Directions (11 – 15): Study the graph and solve the following questions.

Sales/Net Profits of Company (in lakhs)

11. In which year was the net profit as a percentage of the sales revenue the greatest?
(a)1973 (b) 1974 (c) 1979
(d) 1980 (e) None of these

12. Which was the year in which the sales revenue registered the highest percentage growth compared to that of the previous year?
(a)1974 (b) 1976 (c) 1978
(d) 1980 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

13. What was the cumulative net profit/loss of the first five years for which particulars are shown?

(a)2.2 lakhs (b) (–) 1.2 lakhs (c) (–)1.8 lakhs
(d) 3.2 lakhs (e) None of these

14. Which was the year in which the expenses of the company were the highest?

(a)1980 (b) 1979 (c) 1978
(d) 1976 (e) None of these

15. If a tax of 55% was paid on gross profit before the net profit was arrived at, what was the combined gross profit for the years 1979 and 1980? (in Rs. lakhs)

(a)66.44 (b) 62.44 (c) 46.44
(d) 38.44 (e) None of these

Directions (16 – 20): These questions are based on following graph.

Share of world population

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

Adda 247
Govt jobs coaching, now in your Pocket!
Download the Adda 247 App and boost your preparation.
GET IT ON Google Play
Give a missed call on 8099-931-931 to download the App.

GOVT JOB'S COACHING
NOW IN YOUR HANDS
Adda 247
Govt. Job In Your Pocket
QUIZZES REASONING
DAILY GK QUANT ANALYSIS
JOB ALERTS ENGLISH SESSION
DISC.FORUM THE ANALYZERS
HINDI & ENGLISH GEN. AWARENESS
STUDY ARTICLES LIVE DISCUSSION
CURRENT AFFAIRS CURRENT AFFAIRS QUIZ
LEARNING VIDEOS BANKING SESSIONS
YouTube Subscribe Adda247 CHANNEL
FREE ONLINE COACHING
FROM STAR FACULTIES OF BANKERSADDA

The G - 7	Pop. 1990 (Millions)	GNP per capita ($)
Canada	26	19,030
France	56	17,820
Germany	62	20,440
Italy	58	15,120
Japan	123	23,810
U.K.	58	14,610
U.S.A.	250	20,910

The G - 15	Pop. 1990 (Millions)	Real GNP per capita ($)
Algeria	25	2,230
Argentina	32	2,767
Brazil	143	2,540
Egypt	51	640
India	839	350
Indonesia	180	500
Jamaica	2.5	1,260
Malaysia	18	2,160
Mexico	85	1,958
Nigeria	114	250
Peru	21.5	1,010
Senegal	7.5	850
Venezuela	19.5	2,450
Yugoslavia	24	2,920
Zimbabwe	10	650

CAREER POWER AN IIT/NIT ALUMNI COMPANY

16. Which G-7 country has the highest GNP per capita?

(a)Japan (b) USA (c) Canada

(d) UK (e) None of these

17. The lowest GNP of any G-15 nation is what percent of the highest GNP of any other G-7 nation?

(a)1.7% (b) 5.3% (c) 4.3%
(d) 2.9% (e) None of these

18. What is the total GNP of the other world countires if their average GNP per capita is 1140?

(a)$340 8600 (b) $348 9000 (c) $ 468 9600
(d) $340 7600 (e) None of these

19. Which of the following is false about the data given.

(a)Using information given in the above table we can conclude that total GNP of USA is greater than total GNP of other nations put together

(b)Total GNP of Malaysia is more than total GNP of Egypt.

(c) Per capita GNP of only five G-15 nations is more than 15% of the per capita GNP of UK

(d) All of these (e) None of these

20. What is the average of GNP- per capita of G - 7 nations?

(a)$18820 (b) $14820 (c) $17820
(d) $19820 (e) None of these

Directions (21 – 25): Study the table carefully and answer the following questions:

Number of candidates appeared and passed in the examination from six city during the years

Cities → Year ↓	Delhi		Mumbai		Chennai		Kolkata		Lucknow		Kanpur	
	A	P	A	P	A	P	A	P	A	P	A	P
2006	1100	125	1500	115	1400	110	1350	120	1650	125	1700	130
2007	1600	155	1250	120	1450	115	1200	115	1600	120	1800	115
2008	1750	165	1100	110	1500	120	1200	160	1250	145	1350	125
2009	1650	130	1550	125	1550	125	1450	135	1450	115	1100	170
2010	1300	140	1200	140	1500	130	1300	140	1550	135	1250	155
2011	1450	145	1350	125	1400	135	1500	135	1500	140	1500	180

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

21. In the given years what is the approximate of the average numbers of candidates failed in the examination from city Kolkata?

(a) 1100 (b) 1150 (c) 1175
(d) 1200 (e) None of these

22. What is average candidate appeared in 2011?

(a)1300 (b) 1450 (c) 1500
(d) 2400 (e) None of these

23. What will be ratio of candidate fail in Delhi in 2006 and candidate fail Mumbai in 2010?

(a)195 : 212 (b) 212 : 195 (c) 195 : 211
(d) 211 : 195 (e) None of these

24. What will be difference between candidate pass in 2009 from all cities and candidate pass in Lucknow all over the years?

(a)40 (b) 50 (c) 30
(d) 20 (e) None of these

25. Candidate fail in Chennai in 2010 is what percentage of total number of candidate appeared in Delhi all years together?

(a)25% (b) 30% (c) 40%
(d) 15.48% (e) None of these

Directions (26 – 30): Study the following pie charts carefully to answer the questions

Degree-wise breakup of employees working in various departments of an organization and the ratio of Men to Women

Total number of employees = 3250

Production Dept.	HR Dept.	IT Dept.	Marketing Dept.	Accounts Dept.
136.8	36°	57.6°	79.2°	50.4°

Dep. = Department

Respective Ratio of Men to Women in Each Department

Department	Men	Women
Production	1	4
HR	13	12
IT	3	7
Marketing	2	3
Accounts	7	6

26. What is the number of Women working in the Marketing department?
(a)462 (b) 454 (c) 418
(d) 424 (e) None of these

27. What is the respective ratio of the number of Men working in the HR department and the number of Women working in the IT department?
(a)11 : 12 (b) 17 : 29 (c) 13 : 28
(d) 12 : 35 (e) None of these

28. The number of Women working in the Production department of the organization is what percent of the total number of employees working in that department?

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

(a)88 (b) 90 (c) 75
(d) 65 (e) None of these

29. The number of Men working in the IT department of the organization is what percent of the total number of employees in the organization from all departments together?
(a)3.2 (b) 4.8 (c) 6.3
(d) 5.6 (e) None of these

30. What is the total number of women working in the organization?
(a)2198 (b) 2147 (c) 2073
(d) 2236 (e) None of these

Directions (31 – 35): Study the table carefully to answer the questions that follow:

Percentage of Marks obtained by Different students in Different subjects

Students	Hindi (100)	Eng. (50)	Maths (150)	S.St. (125)	Sci. (150)	Marathi (50)
Aditya	98	88	84	88	64	68
Ram	77	92	92	88	84	80
Sanjay	81	80	84	80	78	90
Girish	90	86	76	64	66	56
Mahesh	69	66	66	76	72	72
Anil	89	90	70	92	60	66

31. How much marks did Aditya get in all the subjects together?
(a)508 (b) 477 (c) 454
(d) 537 (e) None of these

32. What is the average marks obtained by all students together in Marathi?
(a)72 (b) 48 (c) 28
(d) 36 (e) None of these

33. How many students have scored the highest marks in more than one subject?

(a)None (b) one (c) two
(d) three (e) None of these

34. What is Sanjay's overall percentage of marks in all subjects together?

(a)85.92 (b) 72.64 (c) 81.44
(d) 76.32 (e) None of these

35. Who has scored the highest marks in all the subjects together?

(a)Aditya (b) Ram (c) Mahesh
(d) Anil (e) None of these

Directions (36 – 40): Study the following graph carefully to answer the question that follow:

Number of Students Studying Different Subjects in a College Over the Years

	2006	2007	2008	2009	2010
History	500	250	700	250	650
Geography	600	150	350	350	450
Math	350	700	750	500	600

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

36. What will be the ratio of student studying History in 2007, 2009 and 2006 together to those who study Math in 2007 and 2010 together?
(a)5 : 6 (b) 10 : 13 (c) 13 : 10
(d) 6 : 5 (e) None of these

37. What will be ratio of No. of students studying History, Geography and math all the year together?
(a)46 : 38 : 59 (b) 47 : 37 : 57 (c) 48 : 38 : 57
(d) 47 : 38 : 58 (e) None of these

38. What will be difference between total number of student of Math & History all the year together except 2007?
(a)200 (b) 150 (c) 100
(d) 125 (e) None of these

39. The number of student who study History in 2010 is approximately what percent of all the student in 2007?
(a)60 (b) 65 (c) 68
(d) 59 (e) None of these

40. In which of the year no. of student in all subject together is lowest?
(a)2007 (b) 2009 (c) 2008
(d) both a & b (e) None of these

CAREER POWER™ AN IITM ALUMNI COMPANY

Directions (41 – 45): Study the following Pie-Chart carefully and answer the questions given below:
A survey conducted on 2900 Villagers Staying in Various Villages and having Various Favourite Sports

41. What is the total number of people having their favorite game Hockey and Badminton together?

(a)1200 (b) 812 (c) 388
(d) 425 (e) None of these

42. How many people having favourite game Cricket?

(a)580 (b) 420 (c) 680
(d) 480 (e) None of these

43. If 40% of the people from village R have cricket as favourite game and 20% of the people have Tennis as favourite game. Then how many people like other game in village R?

(a)1440 (b) 1540 (c) 1640
(d) 1340 (e) None of these

44. If the favorite game of 40% people of village R is Hockey then what will be the Ratio of people who like Hockey expect village R and total no. of people in village P?

(a)16 : 21 (b) 21 : 16 (c) 21 : 31
(d) 31 : 21 (e) None of these

45. 10% of the people from village R have favorite game Tennis then what is the no. of other villagers who like Tennis:

(a)87 (b) 58 (c) 29
(d) 232 (e) None of these

Directions (46 – 50): Study the following table carefully to answer the questions that follow:

Number (N) of Six Type of Electronic Products Sold by Six different stores in a month and the price per product (P) (price in Rs. '1000') charg by each store.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | **Email:** ebooks@adda247.com

Store	A		B		C		D		E		F	
Product	N	P	N	P	N	P	N	P	N	P	N	P
L	54	135	48	112	60	104	61	124	40	136	48	126
M	71	4.5	53	3.8	57	5.6	49	4.9	57	5.5	45	4.7
N	48	12	47	18	52	15	54	11.5	62	10.5	56	11
O	52	53	55	48	48	50	54	49	59	47	58	51
P	60	75	61	68	56	92	44	84	46	76	59	78
Q	43	16	44	15	45	14.5	48	15.6	55	18.2	55	14.9

46. Number of L type products sold by store F is what percent of the number of the same type of products sold by store E?

(a)76.33 (b) 124 (c) 83.33
(d) 115 (e) None of these

47. What is the respective ratio of total number of N and L type of products sold by store D and the same products sold by the store A?

(a)119 : 104 (b) 102 : 115 (c) 104 : 115
(d) 117 : 103 (e) None of these

48. What is the average price per product charged by all the stores togeth for product Q (approx.)?

(a)Rs. 14,700 (b) Rs. 15,700 (c) Rs. 15,200
(d) Rs. 14,800 (e) None of these

49. What is the difference in the amount earned by store A through the sale of P type products and that earned by store B through the sale of the Q type of products?

(a)38.4 lakhs (b) 0.384 lakhs (c) 3.84 lakhs
(d) 384 lakhs (e) None of these

50. What is the difference between number of all type of product sold by store D and total number of O type product sold by all the store together?

(a)116 (b) 26 (c) 36
(d) 136 (e) None of these

Adda 247
VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than
200
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Adda 247
VIDEO COURSE
by India's Top Faculties
for Bank Exams
Banking Complete Video Course
(Available in English & Hindi)
more than
150
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Difficult

Directions (1 – 5): on the basis of the information given in the below tabl

CAREER POWER™ AN IIT/IIM ALUMNI EFFORT

The table above shows the specializations of North West Medical School graduates in 2005. Percentages have been rounded to the nearest whole number.

1200 students graduated that year.

Specialisation	Men : Total
Paediatrics	14 : 26
Emergency Medicine	13 : 22
Geriatric Medicine	3 : 4
Sports Medicine	24 : 45
Immunology	6 : 9
Family Practice	8 : 12

1. What is the percentage of the females who decided to specialize in immunology over the total number of males in geriatric medicine and sports medicine?

(a)15 % (b) 24% (c) 31%
(d) 27 % (e) 17%

2. If one twelfth of the total students plan to work abroad (assuming the students went abroad are proportional from all the department). Then what will be the ratio of the males who decide to practise in India from family practice and paediatrics departments are ?
(a)24 : 9 (b) 32 : 7 (c) 26 : 11
(d) 27 : 7 (e) 31 : 11

3. What is the approximate ratio of females specializing in sports medicine, emergency medicine and family practice?
(a)30 : 12: 50 (b) 12 : 4 : 16 (c) 14 : 9 : 32
(d) 16: 4: 40 (e) 13: 2 :30

4. For the ratio of male to female students specializing in sports medicine practising in India to be 2:1 , how many equal students should go abroad from sports medicine?
(a)76 (b) 70 (c) 68
(d) 74 (e) 72

5. What is the percentage of women in the total number of graduates from the institute?
(a)36.5% (b) 34.5% (c) 38.5%
(d) 37.5% (e) 39%

Directions (6 – 10): Answer the questions based on the following information.

Ghosh Babu surveyed his companies and obtained the following data. Income tax is paid from profit before
tax and the remaining amount is apportioned to dividend and retained earnings. The retained earnings were
accumulated into reserves. The reserves at the beginning of 1991 were **Rs. 80 lakh**.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Figure (Rs. In lakhs)	1994	1993	1992	1991
Share Capital	0310	0205	0098	0098
Sales	6435	4725	2620	3270
Profit Before tax	0790	0525	0170	0315
Dividends	0110	0060	0030	0030
Retainer Earnings	0400	0245	0070	0140

6. In which year was the tax per rupee of 'profit before tax' is lowest?
(a)1991 (b) 1992 (c) 1993
(d) 1994 (e) None of these

7. In which year was the sales per rupee of share capital highest?
(a)1991 (b) 1992 (c) 1993
(d) 1994 (e) None of these

8. In which year the profit before tax per rupee of sales was the highest?
(a)1991 (b) 1992 (c) 1993
(d) 1994 (e) None of these

9. In which year was the percentage addition to reserves over previous years reserves the higest ?
(a)1991 (b) 1992 (c) 1993
(d) 1994 (e) None of these

10. Amount of the reserves at the end of 1994 is
(a) Rs. 935 lakh (b) Rs. 915 lakh (c) Rs. 230 lakh
(d) Rs. 550 lakh (e) None of these

Directions (11 – 15): The circle-graph given here shows the spendings o a country on various sports during a

particular year. Study the graph carefully and answer the questions given below it

11. What percent of total spending is spent on Tennis?

(a) $12\frac{1}{2}\%$ (b) $22\frac{1}{2}\%$ (c) 25%
(d) 45% (e) None of these

12. How much percent more is spent on Hockey than that on Golf?

(a) 27% (b) 35% (c) 37.5%
(d) 75% (e) None of these

13. If the total amount spent on sports during the year be Rs. 1,80,00,000 the amount spent on Basketball exceeds on Tennis by:

(a)Rs. 2,50,000 (b) Rs. 3,60,000 (c) Rs. 3,75,000
(d) Rs. 4,10,00 (e) None of these

14. How much less is spent on Football than that on Cricket?

(a) $22\frac{2}{9}\%$ (b) 27% (c) $33\frac{1}{3}\%$

(d) $37\frac{1}{7}\%$ (e) None of these

15. If the total spendings during the year was Rs. 2 crores, the amount spent on Cricket and Hockey was:

(a)8,00,000 (b) 80,00,000 (c) 1,20,00,000
(d) 1,60,00,000 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Directions (16-20): Study the following pie-diagrams carefully to answ these questions:

Number of students studying in different faculties in the years 2001 and 2002 from State X

16. In which faculty there was decrease in the number of students from 2001 to 2002?

(a)None (b) Arts (c) Agriculture
(d) Pharmacy (e) Engg

17. What is the ratio between the number of students studying pharmacy in the years 2001 and 2002 respectively?

(a)4 : 3 (b) 3 : 2 (c) 2 : 3
(d) 7 : 12 (e) 6 : 5

18. What was the approximate percentage increase in the number o students of Engineering from the year 2001 to 2002?

(a)17 (b) 15 (c) 25
(d) 20 (e) 19

19. In the year 2001, the number of students studying Arts and Commerc together is what percent of the number of students studying these subjects together in 2002?
(a)76 (b) 85 (c) 82
(d) 79 (e) 77

20. In which of the following faculties the percent increase in the number of students was minimum from 2001 to 2002?
(a)Arts (b) Science (c) Commerce
(d) Medicine (e) Agriculture

Directions (21 – 24): Answer the questions based on the the following information.

The amount of money invested (rupees in crores) in the core infrastructur areas of two districts, Chittor and Khammam, Andhra Pradesh, is as follows.

CAREER POWER

Chittor district			Khammam district		
Core area	1995	1996	Core area	1995	1996
Electricity	815.2	1054.2	Electricity	2065.8	2365.1
Chemical	389.5	476.7	Chemical	745.3	986.4
Thermal	632.4	565.9	Thermal	1232.7	1026.3
Solar	468.1	589.6	Solar	1363.5	1792.1
Nuclear	617.9	803.1	Nuclear	1674.3	2182.1
Total	2923.1	3489.5	Total	7081.6	8352.0

21. By what percent was the total investment in the two districts more in 1996 as compared to 1995 (Approx. value)?
(a) 14% (b) 21% (c) 24%
(d) 18% (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

22. The investment in electricity and thermal energy in 1995 in these two districts formed what percent of the total investment made in that year?

(a)41% (b) 47% (c) 52%
(d) 55% (e) None of these

23. In khammam district, the investment in which area in 1996 showed the highest percentage increase over the investment in that area in 1995?

(a)Electricity (b) Chemical (c) Solar
(d) Nuclear (e) None of these

24. Approximately how many times was the total investment in Chittor to the total investment in Khammam?

(a)2.8 (b) 2 (c) 2.4
(d) 1.7 (e) None of these

Directions (25 – 29): Study the following graph and table and answer the following questions:

The graph shows the percentage readers of India's leading newspapers

The following table shows the readers of newspapers age-wise

	Below 35 years	Above 35 years
	Male : Female	Male : Female
Hindustan 25%	8 : 5	9 : 7
Times of India 20%	4 : 3	5 : 4
Hindustan Times 18%	5 : 6	7 : 3
The Hindu 16%	11 : 12	13 : 12
The Statesman 12%	3 : 4	5 : 6
The Qaumi Tazeem 9%	5 : 4	3 : 5

25. If the total readers of The Hindustan Times is 12 lakh, and the total readers comprising male (above 35 y and female (below 35 years) are 2.50 lakh for The Qaumi Tanzeem, what is the total number of male readers (below 35 years) for The Qaumi Tanzeem?
(a)3.60 lakh (b) 2.40 lakh (c) 2.25 lakh
(d) 2 lakh (e) None of these

26. If the total readers comprising female (below 35 years) and male (above 35 years) are 2.40 lakh and 3.50 respectively for The Times of India, what is the total number of readers of The Hindustan ?
(a)11.90 lakh (b) 14.875 lakh (c) 12.35 lakh
(d) Can't be determined (e) None of these

27. The total readers of The Hindu is 10.88 lakh, and the readers comprising the female (below 35 years) male (above 35 years) are 2.40 lakh and 1.80 lakh respectively for The Statesman. What will be the ratio between of the male readers (below 35 years) and the female ones (above 35 years) for The Statesman?
(a)1 :1 (b) 25 : 14 (c) 5 : 6
(d) 3 : 4 (e) None of these

28. The total readers of The Hindustan below 35 years and above 35 years are 20 lakh. What is the number of readers for all the papers?
(a)80 lakh (b) 70.35 lakh (c) 85.34 lakh
(d) Data inadequate (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

29. The total readers of The Hindustan are 10 lakh. What is the total number of male (above 35 years) readers of The Hindustan Times?

(a)3 lakh (b) 7 lakh (c) 3.50 lakh

(d) Data inadequate (e) None of these

Directions (30 – 36): Study the following graphs and table carefully and answer accordingly:

The following Bar-chart show the percentage number of students passed in

CBSE's Class X and Class XII examinations in 2013 from different cities

The following table shows the ratio of the number of boys and gir passing from different cities.

City ↓	X		XII	
	Boys	Girls	Boys	Girls
Delhi	2	3	3	5
Kolkata	9	8	7	8
Mumbai	4	7	3	5
Chennai	13	11	9	7
Ahmedabad	7	5	4	7
Hyderabad	12	13	5	8
Rest	5	9	7	8

30. In X exam, if there are 1000 girls passing from Ahmedabad, then find the approximate number of boys passing from Chennai in the same exam?

(a)3250 (b) 3430 (c) 3750
(d) Data inadequate (e) 3715

31. If 9000 students passed in XII exam from Mumbai, then find the number of girls passing from Delhi in same exam?

(a)9600 (b) 5760 (c) 6000
(d) Data inadequate (e) None of these

32. Which of the following cities shows the maximum percentage of girls passing (with respect to total student passing in that city) in X examination?

(a)Delhi (b) Mumbai (c) Chennai
(d) Rest (e) Hyderabad

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

33. If the difference between the number of boys passing from Chennai and that from Delhi in XII exam is 3630, find the total number of students passed in XII exam in 2013?

(a)72000 (b) 88000 (c) 90000
(d) Can't say (e) None of these

34. In X exam, if 1.20 lakh students pass, then what will be the approximate number of boys passing in the remaining part of the country?

(a)10700 (b) 10720 (c) 10740
(d) 10680 (e) 10760

35. Find the difference between the number of boys passing from Kolkata and Hyderabad, if there are 17000 students passing from Chennai in X exam?

(a)964 (b) 1012 (c) 832
(d) 800 (e) None of these

36. In 2013 as compared to 2012, there is an increase of 4% in the numb of students passing in XII exam. Find the approximate number of students passing in XII exam in 2012?

(a)1 lakh (b) 1.20 lakhs (c) 1.40 lakhs
(d) Data inadequate (e) None of these

Directions(37 – 40): Study the following chart to answer the questions given below.

Adda 247
Govt jobs coaching, now in your Pocket!
Download the Adda 247 App and boost your preparation.
GET IT ON Google Play
Give a missed call on 8099-931-931 to download the App.

ONLINE TEST PROGRAM
to help boost your score in Government Examinations
TIME-BOUND TESTS • DETAILED TEST ANALYSIS
EXPLANATORY SOLUTIONS • ALL INDIA RANKING
STRICTLY BASED ON EXAM PATTERN
Adda 247
Govt. Job in Your Pocket!
COURSES
TEST SERIES
CORRESPONDENCE COURSES
E-LEARNING KIT
CLASSROOM PROGRAM
CART
MY ACCOUNT
ONLINE TEST SERIES
All Courses
BANK OF BARODA
NICL-AO
ADD TO CART
For Adda247 ONLINE TEST | Visit: store.adda247.com

Proportion of Staff of Seven Companies in 2012

37. In 2013 the number of staff decreased by 20% in company P as well a in company Q. If the number of staff in company P in 2012 was 500 and the percentage of staff members who were at least graduate were 80 and 70 percent in companies P and Q respectively in 2013, find the number of staff members in company Q who were not graduate for year 2013?

(a)210 (b) 60 (c) 90
(d) 150 (e) None of these

38. If the number of staff in company R in year 2012 who were no graduate was 144, what was the number of staff in company S in 2012?

(a)300 (b) 600 (c) 450
(d) 900 (e) None of these

39. Which company had maximum number of non-graduates in year 2012?

(a)S (b) M (c) N
(d) Data inadequate (e) None of these

40. In 2014, number of staff in company M increased by 10% and that in company T reduced by 20% from 2012. The number of staff in compa

T in 2012 was 2200. What is the total number of staff in companies M and T together in 2014?

(a)5060 (b) 4760 (c) 5500
(d) 5200 (e) None of these

Previous Year Memory Based

Directions (1 – 5): Study the following bar graph and pie chart carefully and answer the questions that follow.

Percentage of males and females in the five organisations

Percentage of employees in five different organisations

N = 35000

1. Total number of employees in organisation C is approximately what percent of total number of employees in organisation D?
(a) 147% (b) 279% (c) 312%
(d) 207% (e) 183%

2. What is the total number of males in all the organisations together?
(a)13350 (b) 14700 (c) 15960
(d) 16280 (e) 19040

3. What is the total number of males in organisations A and C together?
(a)6125 (b) 8400 (c) 8750
(d) 7400 (e) 8570

4. What is the difference between the number of females in organisation B and the number of females in organisation E?
(a)2100 (b) 3500 (c) 1700
(d) 3010 (e) 3100

5. What is the number of females in organisation D?
(a)3855 (b) 3250 (c) 3300
(d) 3675 (e) 2100

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

Directions (6 – 15): Study the following pie charts and table to answer these questions.

Statewise details of adult population of a country

Graduate and above
Total number = 24 lakh

Upto XII Std pass
Total number = 32 lakh

M : F Ratio [M = Male, F = Female]

States	Graduate and above		Upto XII Std pass	
	M	F	M	F
A	7	5	7	9
B	5	3	3	5
C	5	4	4	5
D	9	8	5	7
E	9	7	9	10
F	4	3	3	2

6. What is the difference between graduate male population and XII Std male population from state A?

(a) 24000 (b) 14000 (c) 28000
(d) 36000 (e) None of these

7. What is the ratio of graduate female population of state E to XII Std female population of state D, respectively?

(a)7 : 5 (b) 5 : 7 (c) 16 : 15
(d) 15 : 16 (e) None of these

8. Graduate female population of state C is what percent of the XII Std female population of that state?

(a)40% (b) 62.5% (c) 50%
(d) 52.5% (e) None of these

9. Class XII pass male population of state C is what percent of the total XII Std. population?

(a)8% (b) 12% (c) 11%
(d) 9% (e) None of these

10. What is the ratio of graduate male population of state E to XII Std. female population of that state?

(a)28 : 35 (b) 35 : 28 (c) 32 : 45
(d) 45 : 32 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

11. Total graduate population of state F is what percent of the total XII Std population of state A?

(a)56% (b) 72% (c) 68%
(d) 76% (e) None of these

12. XII Std male population of state E is what percent of XII Std male population of state F?

(a)70% (b) 75% (c) 68%
(d) 72% (e) None of these

13. What is the ratio of the total graduate and XII Std male population of state A to the total graduate and XII Std female population of that state?

(a)215 : 216 (b) 214 : 215 (c) 217 : 215
(d) 215 : 217 (e) None of these

14. What is the ratio of the total graduate population of state D to total XII Std population of that state?

(a)17 : 16 (b) 16 : 17 (c) 64 : 51
(d) 51 : 64 (e) None of these

15. Graduate female population of state B is what percent of the graduate female population of state E? (rounded off to nearest integer)

(a)129% (b) 82% (c) 77%
(d) 107% (e) None of these

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

Number of candidate appeared (in thousand) and percentage of candidates qualified in a competitive examination over the years (in thousand)

16. What was the ratio between the number of candidates appeared in 2007 and the number of candidates qualified in 2014?

(a)14 : 5 (b) 5 : 14 (c) 3 : 7
(d) 7 : 3 (e) Data inadequate

17. In which of the following years, was the number of candidates qualified the lowest among the given years?

(a)2007 (b) 2011 (c) 2010
(d) 2008 (e) 2014

18. What was the percentage drop in the number of candidate appeared from the year 2012-13?

(a) $66\frac{2}{3}\%$ (b) 30% (c) 70%

(d) $16\frac{2}{3}\%$ (e) $33\frac{1}{3}\%$

19. How many candidates qualified in the year 2012?

(a)6750 (b) 13500 (c) 9900
(d) 6570 (e) Cannot be determined

20. The number of candidates qualified in 2009 was what percent of the number of candidates appeared in 2008?

(a)68.5% (b) 70% (c) 32.5%
(d) 67.5% (e) 65.7%

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Direction (21 – 25): Study the following pie chart and table carefully to answer the questions.

Degreewise breakup of employees working in various departments of an organisation and the ratio of men to women

Total number of employees = 3250

Respective ratio of men to women in each department

Department	Men	Women
Production	4	1
HR	12	13
IT	7	3
Marketing	3	2
Accounts	6	7

21. What is the number of men working in the marketing department?

(a) 462 (b) 454 (c) 418
(d) 424 (e) None of these

22. What is the respective ratio of the number of women working in the HR department to the number of men working in the IT department?

(a)11 : 12 (b) 17 : 29 (c) 13 : 28
(d) 12 : 35 (e) None of these

23. The number of men working in the production department of the organisation forms what percent of the total number of employees working in that department?

(a)88% (b) 90% (c) 75%

(d) 65% (e) None of these

24. The number of women working in the IT department of the organisationn forms what percent of the total number of employees in the organisation from all departments together?

(a)3.2% (b) 4.8% (c) 6.3%

(d) 5.6% (e) None of these

25. What is the total number of men working in the organisation?

(a)2198 (b) 2147 (c) 2073

(d) 2236 (e) None of these

Directions (26 – 30): Study the following graph and table carefully and answer the questions given below.

Time taken to travel (in hours) by six vehicles on two different days

Distance covered (in km) by six vehicles on each day

Vehicle	Day 1	Day 2
A	832	864
B	516	774
C	693	810
D	552	765
E	935	546
F	703	636

26. Which of the following vehicles travelled at the same speed on both the days?

(a)Vehicle A (b) Vehicle C (c) Vehicle F
(d) Vehicle B (e) None of these

27. What was the difference between the speed of vehicle A on day 1 and the speed of vehicle C on the same day?

(a)7 km/hr (b) 12 km/hr (c) 11 km/hr
(d) 8 km/hr (e) None of these

28. What was the speed (in m/s) of vehicle C on day 2?

(a)15.3 (b) 12.8 (c) 11.5
(d) 13.8 (e) None of these

29. The distance travelled by vehicle F on day 2 was approximately what percent of the distance travelled by it on day 1?

(a)80% (b) 65% (c) 85%
(d) 95% (e) 90%

30. What is the ratio of the speeds of vehicle D and vehicle E on day 2?

(a)15 : 13 (b) 17 : 13 (c) 13 : 11
(d) 17 : 14 (e) None of these

Directions (31 – 35): Study the following pie chart and table carefully and answer the questions given below.

Percentage wise distribution of the number of mobile phones sold by a shopkeeper during six months.

Total number of mobile phones sold = 45000
The ratio between the numbers of mobile phones sold of company A and company B during six months

Month	Ratio
July	8 : 7
August	4 : 5
September	3 : 2
October	7 : 5
November	7 : 8
December	7 : 9

31. What is the ratio of the number of mobile phones sold of company B during July to those sold during December of the same company?

(a)119 : 145 (b) 116 : 135 (c) 119 : 135
(d) 119 : 130 (e) None of these

32. If 35% of the mobile phones sold by company A during November were sold at a discount. How many mobile phones of company A during that month were sold without a discount?

(a)882 (b) 1635 (c) 1638
(d) 885 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

33. If the shopkeeeper earned a profit of Rs. 433 on each mobile phone sold of company B during October, what was his total profit earned on the mobile phones of that company during the same month?

(a)Rs. 649900 (b) Rs. 645900 (c) Rs. 649400
(d) Rs. 649500 (e) None of these

34. The number of mobile phones sold of company A during July is approximately what percent of the number of mobile phones sold of company A during December?

(a)110% (b) 140% (c) 150%
(d) 105% (e) 130%

35. What is the total number of mobile phones sold of Company B during August and September together?

(a)10000 (b) 15000 (c) 10500
(d) 9500 (e) None of these

Directions (36 – 40): Study pie chart and table carefully to answer the questions that follow.

Pie chart showing percentage Distribution wise of cars in four different state

Total Cars = 700

Table showing ratio between diesel and petrol engine cars which are distributed among four different states

States	Diesel engine cars	Petrol engine cars
State 1	3	4
State 2	5	9
State 3	5	3
State 4	1	1

36. What is the different between the number of diesel engine cars in state 2 and the number of petrol engine car in state 4?

(a)159 (b) 21 (c) 28
(d) 34 (e) 161

37. Number of petrol engine cars in state 3 is what percent more than the number of diesel engine care in state 1?

(a)100% (b) 200% (c) 300%
(d) 125% (e) 225%

38. If 25% of diesel engine cars in state 3 are AC and remaining cars are non-AC, what is the number of diesel engine car in state 3 which are non-AC?

(a)75 (b) 45 (c) 95
(d) 105 (e) 35

39. What is the difference between the total number of cars in state 3 and the number of petrol engine cars in state 2?

(a)96 (b) 106 (c) 112
(d) 102 (e) 98

40. What is the average number of petrol engine cars in the states together?

(a)86.75 (b) 89.25 (c) 89.75
(d) 86.25 (e) 88.75

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than
200
HOURS
of video classes
Adda 247
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

VIDEO COURSE
by India's Top Faculties
for Bank Exams
Banking Complete Video Course
(Available in English & Hindi)
more than
150
HOURS
of video classes
Adda 247
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Practice Questions Based on Latest Pattern 2016 – 2017

Directions (1 - 5): There are five shop owners Gaurav, Bikash, Mohit, Neeraj and Bikram. They are selling four different items given in the table In the table, discount (as a percentage) is given on mark price of these fo products by these different sellers. Study the table and answer the followi questions:

	Item I	Item II	Item III	Item IV
Gaurav	—	36%	32%	—
Bikash	28%	—	28%	45%
Mohit	—	22%	28%	16%
Neeraj	18%	24%	16%	—
Bikram	—	7%	—	4%

Note:

1. Some values are missing. You have to calculate these values as per data given in the questions.
2. Mark price of a particular item is same for all of the shop owners.

1. Cost price of item III is 900 Rs. for all of the sellers and all of them marked the same product at $55\frac{5}{9}$% higher than the cost price, then to get a total profit of 624 Rs. by all of the five sellers after selling item III what is the minimum discount should be provided by Bikram on item III.
   (a) 20% (b) 35% (c) 30%
   (d) 25% (e) None of these
2. Average SP of item IV by Mohit and Neeraj is Rs 1890 and by Neeraj and Bikram is Rs 2100. Find the SP (in Rs.) of item IV by Neeraj.
   (a) 453 (b) 930 (c) 750
   (d) 840 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

3. If the selling price of item I and item IV by Gaurav are in the ratio of 5 : 6. If Gaurav earned a profit of 25% which is Rs. 1600 on item I and 2 on item IVthen find the total profit (in Rs.) by selling item I and item IV together by the same seller ?

(a) 4750 (b) 3200 (c) 3750
(d) 2250 (e) 3500

4. If the profit percent of Bikash after selling item I is x% and that of Neeraj for the same item is (x + 10)% and the ratio of the cost price of item I by Bikash and that of item I by Neeraj is 432 : 451 then find the value of x ?

(a) 10 (b) 15 (c) 20
(d) 5 (e) None of these

5. Mark price of item II for Gaurav is 25% more than that of cost price an there is a loss of 320 Rs. after selling item II by Gaurav. Average sellin price of item II by all of these sellers is 1440 Rs. then find the discount (in Rs.) on item II by Bikash ?

(a) 41% (b) 45% (c) 53%
(d) 47% (e) 51%

CAREER POWER™ AN IIT/NIT ALUMNI COMPANY

Directions (6 - 10): Study the data given below and answer the following questions. The pie charts shown below shows the distance covered by a boat moving upstream and downstream in different days of a week. And the table shows the speed of stream in km/hr. in different days of a week.

Total distance covered upstream = 1800 km

Total distance covered downstream = 1200 km

Day	Speed of stream (km/hr)
Monday	3
Tuesday	4
Wednesday	—
Thursday	2
Friday	1
Saturday	–
Sunday	5

6. The speed of boat in still water on Friday was 26 km/hr. and that on Saturday was $15\frac{5}{13}\%$ less than that on Friday, if the time taken by boat to travel upstream on Friday is $\frac{3}{2}$ times of time taken to travel downstream on Saturday, then find the time taken by the boat to cover a distance of 75 km downstream on Saturday?

(a) 3 hrs. (b) 2 hrs. (c) 4 hrs.
(d) 2.5 hrs. (e) None of these

7. If the time taken by boat to travel downstream on Monday is 12 hours less than the time taken by it to travel upstream on Friday and the speed of boat in still water on Friday is 13.75 kmph, then find the upstream speed of boat on Monday?

(a) 7 kmph (b) 9 kmph (c) 6 kmph
(d) 5 kmph (e) None of these

8. If the time taken by boat to travel downstream on Thursday is equal to the time taken by it to travel upstream on Tuesday and the speed of boat in still water on Tuesday is 16 kmph then find the speed of boat in still water on Thursday?

(a) 6 kmph (b) 7.2 kmph (c) 5.4 kmph
(d) 3 kmph (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

9. If the time taken by boat to travel downstream on Monday is $\frac{1}{3}$ times of the time taken by it to travel upstream on the same day, then find the speed of boat in still water on Monday ?

(a) 22 kmph (b) 15 kmph (c) 20 kmph
(d) 19 kmph (e) None of these

10. If the speed of boat in still water on Sunday was 12 km/hr and the speed of boat in still water on Saturday was $33\frac{1}{3}\%$ more than that of Sunday and time taken to travel upstream on Sunday is 2 times than time taken by it to travel upstream on Saturday, then find the speed of stream (in kmph) on Saturday?

(a) $7\frac{1}{2}$ (b) $7\frac{12}{17}$ (c) $5\frac{13}{17}$
(d) $7\frac{13}{17}$ (e) None of these

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

Directions (11 - 15): Study the table given below and answer the followin questions.

Four friends Abhi, Gaurav, Shailesh and Aman invested money in differen businesses in pairs. The table shows the ratio of their investment, the rati of the time they invested their capital for and the profit (in percentage) earned by them.

Persons	Ratio of investment (in order of the names written)	Ratio of time (in order of the names written)	Profit observed (in %)
Abhi & Shailesh	2 : 3	11 : 6	20%
Shailesh & Gaurav	4 : 3	1 : 1	35%
Aman & Abhi	7 : 5	5 : 3	30%
Gaurav & Aman	5 : 4	2 : 5	25%
Abhi & Gaurav	1 : 1	5 : 1	21%
Shailesh & Aman	7 : 11	1 : 3	40%

11. If Gaurav's investment with Shailesh is equal to his investment with Aman, then find the profit earned by Gaurav in partnership with Aman (Shailesh and Gaurav together earned a profit of Rs. 7350)

(a) Rs. 1350 (b) Rs. 2350 (c) Rs. 1050
(d) Rs. 3350 (e) None of these

12. If Abhi earned a profit of Rs. 2160 in partnership with Aman and his investment with Aman is $33\frac{1}{3}\%$ less than his investment with Shailesh, then find the profit observed by Shailesh in partnership with Abhi?

(a) Rs. 2375 (b) Rs. 3375 (c) Rs. 2275
(d) Rs. 3275 (e) None of these

13. If Shailesh and Aman together invested Rs. 18000 and the profit earn by Shailesh in partnership with Aman is half of the profit earned by Abhi in partnership with Gaurav, then find the total investment made by Abhi and Gaurav together ?

(a) Rs. 12400 (b) Rs. 13400 (c) Rs. 14400
(d) Rs. 15400 (e) None of these

14. If Gaurav and Aman together earned a profit of Rs. 9000 and the investment of Gaurav and Aman together in their partnership is equal to the investment of Shailesh and Abhi together in their partnership, then find the profit earned by Abhi in his partnership with Shailesh ?

(a) Rs. 2960 (b) Rs. 1960 (c) Rs. 4960
(d) Rs. 3960 (e) None of these

15. If profit earned by Aman and Abhi together is equal to that earned by Gaurav and Aman, then find the ratio of profit earned by Aman in partnership with Abhi to the profit earned by him in partnership with Gaurav?

(a) 21:20 (b) 23:21 (c) 20:19
(d) 22:19 (e) None of these

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Directions (16 - 20): Pie chart shows the % time taken by 8 different persons namely A, B,C, D,E,F,G andHto reach a particular point but the starting point is not same and total time taken by all of them together is 500 hr. (partly by car and remaining by train)
The line graph shows % distance travelled by car out of total distance travelled by them individually.

% Distance travelled by car

16. Find speed of E by train, if the speed of car is 60 km/hr and time taken by car and train are in the ratio of 4 : 3.

(a) 50 km/hr (b) 45 km/hr (c) $53\frac{1}{3}$ km/hr

(d) $56\frac{2}{3}$ km/hr (e) $51\frac{2}{3}$ km/hr

17. Find the speed of D by car. If the speed by train is 22 km/hr and time taken by car is 50% less than the train.

(a) 45 km/hr (b) 54 km/hr (c) 36 km/hr
(d) None of these (e) 48 km/hr

18. If the distance travelled by B, C and D together and E,F,G and H together is same, then find the ratio of average speed of B,C and D together and E,F,G and H together.

(a) 6 : 5 (b) 8 : 7 (c) 7 : 8
(d) 5 : 6 (e) 7 : 9

19. Average speed of A and C are in the ratio of 4 : 3 and C have travelle 500 km more than A. Find the speed of A by car if the speed of A by train is 120 km/hr.

(a) 80 km/hr (b) 60 km/hr (c) 65 km/hr
(d) 75 km/hr (e) None of these

20. Total distance travelled by G is 2250 and the speed by train is 45 km/hr. Find the speed of G by car.

(a) 50 km/hr (b) 60 km/hr (c) 70 km/hr
(d) 40 km/hr (e) None of these

Foundation

1. (b); Total rice production = 58.64
W. B production = 8.09

$\therefore$Required percentage $=\frac{8.09}{58.64}\times 100$ = 13.8 $\approx$ 13. 5%

2. (b); Required amount
= (15.97) – (0.81 + 3.72 + 0.86 + 4.42)
= 15.97 – 9.81 = 6.16 m tonnes

3. (b); Wheat production was produced by states other then those given in the table
= (44.23) – (15.97 + 0.81 + 3.72 + 0.86 + 4.42)
= (44.23) – (25.78) = 18.45

$\therefore$ Required % $=\frac{18.45}{44.23}\times 100$= 41.71 $\approx$ 42%

4. (d); Required percentage $=\frac{7.18+15.97+2.76}{58.64+44.23+12.2}\times 100$

$=\frac{25.91}{115.07}\times 100$= 22.52%

5. (a); Clearly we can sea that in all of the states U.P was the top producer of all the three crops

6. (b); Required percentage $=\frac{375}{(375+300+175)}\times 100$

$=\frac{375}{850}\times 100 \approx 45\%$

7. (d); Passengers travelled by railroad
= 300 + 300 + 300 + 275 + 260 + 265 = 1700

8. (e); Required ratio $=\frac{200\times 50}{400\times 0.5}=\frac{10000}{200}=\frac{50}{1}$

9. (c); Average $=\frac{175}{25}=7$ million

10. (a); Required units = (300 – 265) = 35

11. (c); From both pie-charts we can say that in semi-durables hard-workers spend more then average workers.

12. (c); There are two such items - durables, Entertainmnet
= (8 + 7) % of 3500 = 15% of 3500 = 525

13. (d); We can't conclude it. Because clearly it is not mentioned any where in the question.

14. (d); New salary = 120% of 3500 = 4200
New saving amount = 700 + 10% of 3500 = 1050

$\therefore$ Saving percentage$=\frac{1050}{4200}\times 100=$ 25%

15. (d); In the question, Information is not given.

16. (b); 1000 Rs. is $\left(\frac{1000}{6000}\times 100=16.66\%\right)$ of 6000.

$\therefore$ Required No of items
= House rent (1) + saving (1) = 2

17. (b); 1800 is $\left(\frac{1800}{6000}\times 100=30\%\right)$ of 6000

Which is equal to expense on house rent

18. (d); Annual saving $=12\times\frac{23}{100}\times 6000$

= 12 × 23 × 60 = 720 × 23 = 16560

19. (c); Petrol expense = 500
Let the monthly, salary be x Rs.

$\frac{10}{100}\times x=500 \quad \Rightarrow x = 5000$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

20. (b); Total percentage of money spent on clothes and saving
= 7 + 23 = 30 %
Which is equal to house-rent

21. (c); % increase $=\frac{151-105}{105}\times100=\frac{46}{105}\times100\approx43\%$

22. (d); Total commulative shortfall
= 15 + 14 + 13 + 15 + 19 = 76

23. (b); Required number $=\frac{170}{97}$ = 1.75

24. (d); % growth in power requirment

From 1979 – 80 to 1984 – 85 $=\frac{170-118}{118}\times100$

$=\frac{52}{118}\times100$= 44%

% growth in power requirment from

1974 – 75 to 1979 – 80 $=\frac{118-78}{78}\times100$

$=\frac{40}{78}\times100$= 51.2%

∴ % growth = (51.2 – 44) = 7% (Approx.)

25. (c); In 1979 – 80 demand was 118 which completed in 1982 – 83 mea
3 years.

26. (c); Average selling in 2010 $=\frac{159}{6}\times1000$= 26500

Average selling in 2006 $=\frac{126}{6}\times1000$= 21000

Difference = 26500 – 21000 = 5.5 thousands

27. (b); Required % $=\frac{27}{15}\times100$= 180%

28. (b); Required percentage = $\frac{2.4}{16} \times 100 = 15\%$

29. (e); 2006 → 126
2007 → 120
2008 → 132
2009 → 147.1
2010 → 159.0
2011 → 159.2
Clearly in year 2011, the sale of mobiles is maximum

30. (a); Required percentage $= \frac{21-12}{12} \times 100 = \frac{9}{12} \times 100$

$= \frac{3}{4} \times 100 = 75\%$

31. (e); Required Ratio = 550 : 250 : 400
= 55 : 25 : 40 = 11 : 5 : 8

32. (b); Average no of male employees working in all the Banks together

in 1994 $= \left(\frac{400+450+600+450}{4}\right) = \frac{1900}{4} = 475$

33. (a); Total no. of handicaped candidates
= 20% of 250 + 30% of 450 = 50 + 135 = 185

34. (e); Total no. of required persons = 650 + 400 + 450 = 1500

35. (c); Required percentage

$$= \frac{350+550+350+650+400}{(400+650+150+500+500+650+600+700)} \times 100$$

$$= \frac{2300}{4150} \times 100 = 55\%$$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

36. (d); Male in grade U = $\frac{26}{100}\times 3200 = 832$

Total employee in grade, U = 1600

$\therefore$ Female = 1600 – 832 = 768

$\therefore$ Ratio $=\frac{768}{832}=\frac{96}{104}=\frac{24}{26}=\frac{12}{13}$

37. (a); Employee in grade R $=\frac{16}{100}\times 8000 = 1280$

Male in grade R $=\frac{11}{100}\times 3200 = 352$

$\therefore$ Female = 1280 – 352 = 928

$\therefore$ Required half of difference $=\frac{1}{2}(928 - 352)$

$=\frac{1}{2}\times 576 = 288$

38. (e); Male employee of grade , P $=\frac{20}{100}\times 3200 = 640$

Total employee of grade P $=\frac{18}{100}\times 8000$ = 1440

$\therefore$ Female employee in grade P = 1440 – 640 = 800

$\therefore$ Recquired % $=\frac{800}{640}\times 100$ = 125%

39. (e); Total employee P $=\frac{18}{100}\times 8000 = 1440$

Q $=\frac{12}{100}\times 8000 = 960$, R $=\frac{16}{100}\times 8000 = 1280$

$S=\frac{15}{100}\times 8000=1200$, $T=\frac{19}{100}\times 8000=1520$

$U=\frac{20}{100}\times 8000=1600$

Male employee in grade (P) $=\frac{20}{100}\times 3200=640$

$Q=\frac{17}{100}\times 3200=544$, $R=\frac{11}{100}\times 3200=352$

$S=\frac{12}{100}\times 3200=384$, $T=\frac{14}{100}\times 3200=448$

$U=\frac{26}{100}\times 3200=832$

$\therefore$ Female employee in grade

P = 1440 – 640 = 800

Q = 960 – 544 = 416, R = 1280 – 352 = 928

S = 1200 – 384 = 816, T = 1520 – 448 = 1072

U = 1600 – 932 = 768

Clearly in grade T there are maximum females

40. (e); Required % $=\frac{816-384}{384}\times 100=\frac{432}{384}\times 100$ =112.5%

41. (e); Total No. of males in all department together

$=\frac{2}{5}\times 125+\frac{7}{15}\times 225+\frac{11}{15}\times 150$

$+\frac{12}{25}\times 375+\frac{17}{25}\times 175+\frac{5}{14}\times 350$

= 50 + 105 + 110 + 180 + 119 + 125 = 689

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

42. (e); Male in Hr department and finance department = 105 + 110 = 215

Female in calling and Production departement

$\frac{13}{25}\times375+\frac{9}{14}\times350$= 195 + 225 = 420

required difference = 420 – 215 = 205

43. (c); Female in diffenrent departments-

IT $\rightarrow \frac{3}{5}\times125=75$, HR $\rightarrow \frac{8}{15}\times225=120$

Finance $\rightarrow \frac{4}{15}\times150=40$

Calling $\rightarrow \frac{13}{25}\times375=195$

Marketing $\rightarrow \frac{8}{25}\times175=56$

Production $\rightarrow \frac{9}{14}\times350=225$

$\therefore$ Less in Finance

44. (a); Requried Ratio $=\frac{\frac{12}{25}\times375}{\frac{8}{15}\times225}=\frac{180}{120}$= 3 : 2

45. (e); Total no. of employees

= 125 + 225 + 150 + 375 + 175 + 350 = 1400

Let us simplify the chart

R	500	400	600	800	900	700	700
Q	400	550	500	700	600	500	750
P	350	500	400	600	550	400	500
	2001	2002	2003	2004	2005	2006	2007

46. (d); %rise in

2002 = $\frac{150}{400} \times 100 = 37.5\%$

2003 = $\frac{-50}{550} \times 100 = -9.09\%$

2004 = $\frac{200}{500} \times 100 = 40\%$

2005 = % down

2006 = % down

2007 = $\frac{250 \times 100}{500}\%$ = 50%

47. (a); Average purchages of onions by dealer

$= \frac{400+550+500+700+600+500+750}{7} = \frac{4000}{7}$ = 571.42

48. (d); Total onion purchased by dealer P = 350 + 500 + 400 + 600 + 55
+400 + 500 = 3300

$\therefore$ Required % $= \frac{3300}{4000} \times 100$ = 82.5%

49. (e); Required % $= \frac{700-600}{600} \times 100 = \frac{1}{6} \times 100$ = 16.66%

50. (d); Required Ratio $= \frac{400+550+500}{800+700+600} = \frac{1450}{2100} = \frac{145}{210}$ = 29 : 42

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Adda 247
Govt jobs coaching, now in your Pocket!
Download the Adda 247 App and boost your preparation.
GET IT ON Google Play
Give a missed call on 8099-931-931 to download the App.

VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than 200 HOURS of video classes
Adda 247
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Moderate

1. (b); From the tabe, if we see the imports in each year then we will find that each year it is increasing.

2. (a); Ratio of imports to exports in:

1980-81 = $\frac{12549}{6711}$ = 1.87, 1981-82 = $\frac{13608}{7806}$ = 1.74

1982-83 = $\frac{14293}{8803}$ = 1.62, 1983-84 = $\frac{15831}{9771}$ = 1.62

1984-85 = $\frac{17173}{11855}$ = 1.44, 1985-86 = $\frac{18371}{10420}$ = 1.76

1986-87 = $\frac{20063}{12550}$ = 1.6

Maximum ratio = 1980-81

3. (c); Percentage increase in exports-

in year 1981-82 = $\frac{7806-6711}{6711} \times 100$ = 16.31%

in year 1982-83 = $\frac{8803-7806}{7806} \times 100$ = 12.77%

in year 1983-84 = $\frac{9771-8803}{8803} \times 100$ = 11%

in year 1984-85 = $\frac{11855-9771}{9771} \times 100$ = 21.32%

in year 1985-86 = Percentage decrease

in year 1986-87 = $\frac{12550-10420}{10420} \times 100$ = 20.44%

Required year = 1984-85

4. (b); Total trade deficit for the last five years

= 5490 + 6060 + 5318 + 7951 + 7513 = 32332

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

5. (a); The difference between imports and exports in year

1980-81 = 12549 – 6711 = 5838
1981-82 = 13608 – 7806 = 5802
1982-83 = 14293 – 8803 = 5490
1983-84 = 15831 – 9771 = 6060
1984-85 = 17173 – 11855 = 5318
1985-86 = 18371 – 10420 = 7951
1986-87 = 20063 – 12550 = 7513
Required year = 1985-86

6. (c); Public debt rose by $=\frac{23380-20825}{20825}\times 100$

$=\frac{2555}{20825}\times 100=\frac{2555}{20825}\times 100=12.26\%\approx 12\%$

7. (d); Public debt rose by from 1983 to 1984
= (26880 – 25530) = 1350

8. (c); In each year, public debt increased in percentage

1981 = $\frac{21570-20825}{20825}\times 100=3.57\%$

1982 = $\frac{23380-21570}{21570}\times 100=8.39\%$

1983 = $\frac{25530-23380}{23380}\times 100=9.19\%$

1984 = $\frac{26880-25530}{25530}\times 100=5.28\%$

1985 = $\frac{28200-26880}{26880}\times 100=4.91\%$

1986 = $\frac{30500-28200}{28200}\times 100=8.15\%$

Required Year = 1983 – 84

9. (a); Required period = 1980-81

10. (b); Required period = 1982- 83

11. (d); Clearly, highest sale and net profit recorded in the year 80.

12. (a); From year 1973 to 1974, sales is double it self.

$\therefore$ Required year = 1974

13. (c); Net Profit / Loss of first five years

= 2.1 + 3.5 – 3.2 – 4.2 + 0 = –1.8 laks

14. (c); From the figure it clearly shows that the required year = 1978

15. (a); Combined gross profit $= \frac{100}{45} \times 14.3 + \frac{100}{45}(15.6)$

$= \frac{100}{45}(29.9) =$ 66.44 lakhs

16. (a); From fig, it is clearly that Japan

17. (e); Required percentage $= \frac{250}{23810} \times 100 =$ 1.05%

18. (e); 12.5% of the population

= (26 + 56 + 62 + 58 + 123 + 58 + 250)

12.5% of x = 633

$\therefore \quad x = \frac{633 \times 100}{12.5} \qquad \Rightarrow x = 5064$

$\therefore$ Required total GNP = 5064 × 1140 = 5772960

19. (a); From the table we can see that statement I is false

20. (a); Average GNP of G-7 nations

$= \frac{19030 + 17820 + 20440 + 15120 + 23810 + 14610 + 20910}{7} =$ 18820

21. (d); Average

$= \frac{1230 + 1085 + 1040 + 1315 + 1160 + 1365}{6} = \frac{7195}{6} \approx 1200$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

22. (b); Average

$$=\frac{1450+1350+1400+1500+1500+1500}{6}=\frac{8700}{6}=1450$$

23. (a); Radio $=\frac{1100-125}{1200-140}=\frac{975}{1060}=\frac{195}{212}$

24. (d); Required difference

= (130 + 125 + 125 + 135 + 115 + 170)

– (125 + 120 + 145 + 115 + 135 + 140)

= 800 – 780 = 20

25. (d); Required percentage $=\frac{1500-130}{8850}\times100=\frac{1370}{8850}\times100=15.48\%$

Solutions: (26 – 30)

First we have to convert degree into percentage for converting it we have to multiply by $\frac{5}{18}$ degree because

360° = 100%, $1°=\frac{100}{360}=\frac{5}{18}$

Do production = $136.8°\times\frac{5}{18}=38\%$

H R = $36\times\frac{5}{18}=10\%$, IT = $57.6\times\frac{5}{18}=16\%$

Marketing $=79.2\times\frac{5}{18}=22\%$

Account = $50.4\times\frac{5}{18}=14\%$

26. (e); Women in marketing department

$$=\frac{22}{100}\times\frac{3}{5}\times3250=429$$

27. (c); Ratio = $\dfrac{3250\times\frac{10}{100}\times\frac{13}{25}}{3250\times\frac{16}{100}\times\frac{7}{10}} = \dfrac{10\times13\times10}{16\times7\times25}$ = 13 : 28

28. (e); Required percentage = $\frac{4}{5}\times100$ = 80%

(we can easily calulate the required percentage by given ratio).

29. (b); Required % = $\dfrac{3250\times\frac{3}{10}\times\frac{16}{100}}{3250}\times100 = \dfrac{48}{10}$ = 4.8 %

30. (b); Women working in organization

Production $=\frac{38}{100}\times\frac{4}{5}\times3250$= 988

HR $=\frac{12}{25}\times\frac{10}{100}\times3250$= 156

IT $=\frac{7}{10}\times\frac{16}{100}\times3250$= 364

Marketing $=\frac{3}{5}\times\frac{22}{100}\times3250$= 429

Account $=\frac{6}{13}\times\frac{14}{100}\times3250$= 210

Total = 988 + 156 + 364 + 429 + 210 = 2147

31. (a); Required marks

$=98+\frac{88}{2}+84\times\frac{3}{2}+88\times\frac{5}{4}+64\times\frac{3}{2}+\frac{68}{2}$

= 98 + 44 + 126 + 110 + 96 + 34 = 508

32. (d); Average marks $=\frac{1}{2}\left[\dfrac{68+80+90+56+72+66}{6}\right]$

$=\frac{1}{2}\left(\frac{432}{6}\right)=\frac{216}{6}$ = 36

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

33. (b); From the table, we can see that only Ram scored the highest marks in more then one subject.

34. (c); Sanjay's overall percentage

$$=\frac{81+40+126+100+117+45}{625}\times 100 \;=\frac{509}{625}\times 100 = 81.44\%$$

35. (b); Ram has greatest marks then Aditya in all subjects except hindi. Rest are not in picture.

36. (b); Required ratio $=\frac{250+250+500}{700+600} \;=\frac{1000}{1300} = 10:13$

37. (d); History – 500 + 250 + 700 + 250 + 650 = 2350

Geography - 600 + 150 + 350 + 350 + 450 = 1900

Math - 350 + 700 + 750 + 500 + 600 = 2900

∴Ratio will be- 2350 : 1900 : 2900 = 47 : 38 : 58

38. (c); Math = 2900 – 700 = 2200

History = 2350 – 250 = 2100

Difference = 2200 – 2100 = 100

39. (d); Required percentage = $\frac{650}{1100}\times 100 = 59\%$

40. (d); 2006→ 1450

2007→ 1100

2008→ 1800

2009→ 1100

2010→ 1700

∴ Required year = 2007 and 2009

41. (e); Required people $=\frac{(28+12)}{100}\times 2900 \;=\frac{40}{100}\times 2900 = 1160$

42. (a); People having favourite game cricket $=\frac{20}{100}\times 2900 = 580$

43. (e); Cricket as favourite game from village R

$$=\frac{40}{100}\times\frac{30}{100}\times 2900 = 12 \times 29 = 348$$

Tennis as favourite game from village R

$$=\frac{20}{100}\times\frac{30}{100}\times 2900 = 29 \times 2 \times 3 = 174$$

$\therefore$ Required people = 870 – (174 + 348)
= 870 – 522 = 348

44. (a); People who like hockey in village R

$$=2900\times\frac{30}{100}\times\frac{40}{100} = 29 \times 12 = 348$$

Total people who like hockey $=\frac{28}{100}\times 2900 = 28 \times 29 = 812$

People except village R like hockey = 812 – 348 = 464

Total No. of people in village P $=\frac{21}{100}\times 2900 = 609$

$\therefore$ Required Ratio $=\frac{464}{609}$ = 16 : 21

45. (d); People like tennis in village R $=\frac{10}{100}\times\frac{30}{100}\times 2900 = 29 \times 3 = 87$

No. of the villagers who like $=\frac{11\times 2900}{100} - 87 = 232$

46. (e); Required percentage $=\frac{48}{40}\times 100 = 120\%$

47. (e); Required ratio $=\frac{61+54}{54+48}=\frac{115}{102}$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

48. (b); Required average

$$= \frac{43\times16+44\times15+45\times14.5+48\times15.6+55\times18.2+55\times14.9}{43+44+45+48+55+55}$$

$$=\frac{688+660+652.5+748.8+1001+819.5}{290}$$

$$=\frac{4569.8}{290}=15.757 \text{ thousand } \approx 15700$$

49. (a); A → 60 × 75 = 4500

B → 44 × 15 = 660

Difference = 4500 – 660 = 3840 thousands = 38.40 Lacs

50. (e); All type of product sold by store D = 310

Total no. of O type product = 326

Difference = 326 – 310 = 16

Difficult

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

1. (d); Required percentage = $\dfrac{\frac{3}{9}\times\frac{9}{100}\times1200}{\left(\frac{3}{4}\times\frac{4}{100}\times1200+\frac{24}{45}\times\frac{15}{100}\times1200\right)}\times100$

$$=\frac{3\times12}{(3\times12)+(8\times12)}\times100=\frac{36}{132}\times100\approx27\%$$

2. (b); Total students in India = $\frac{11}{12}\times1200=1100$

∴ Required Ratio

$$=\left(\frac{8}{12}\times\frac{48}{100}\times1100\right)\left(\frac{14}{26}\times\frac{13}{100}\times1100\right)=352:77=32:7$$

3. (c); Required Ratio =

$$\frac{21}{45}\times\frac{15}{100}\times1200:\frac{9}{22}\times\frac{11}{100}\times1200:\frac{4}{12}\times\frac{48}{100}\times1200=14:9:32$$

4. (e); Ratio of male to female practising sports medicine = 8 : 7
No. of male = 96 ⇒ No. of female = 84
For them to be in the ratio 2 : 1, 72 students should go from each

5. (d); The percentage of females from all of the Institute
= 6% + 4.5% + 1% + 7% + 3% + 16% = 37.5%

6. (d); As we know that (Divided + Retained Earnings) = (Profit Before tax) – (tax)
Tax = (Profit before tax) – (Divided + Retained Earnings)

Figure (Rs. In lakhs)	1994	1993	1992	1991
Share Capital	0310	0205	0098	0098
Sales	6435	4725	2620	3270
Profit Before tax	0790	0525	0170	0315
Dividends	0110	0060	0030	0030
Retainer Earnings	0400	0245	0070	0140

So From the table, we can say that
Tax Per Rupee of 'profit before tax' is lowest for 1994

7. (a);

	1991	1992	1993	1994
Sales	3270	2620	4725	6435
Share Capital	98	98	205	310
Sales per rupees of share capiital	33.6	26.73	23.04	20.75

∴ Highest for 1991 year

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

8. (d);

	1991	1992	1993	1994
Profit before tax	315	170	525	790
Sales	3270	2620	4725	6435
Profit before tax per rupee of sales	0.09	0.06	0.11	0.12

∴ Highest for 1994 year

9. (a);

	1991	1992	1993	1994
Reserves	80	220	290	535
Retainers Earning	140	70	245	400
Percentage Addition To Reserves	175%	31%	84%	75%

∴ Required year = 1991

10. (a); From the table it is clear that the amount of Reserves at the end of
1994 = (535 + 400) = 935 lakh

11. (a); Required percentage = $\frac{45}{360}\times 100 = \frac{5}{40}\times 100$

$= \frac{100}{8} = \frac{25}{2} = 12\frac{1}{2}\%$

12. (d); Required percent = $\frac{63-36}{36}\times 100 = \frac{27}{36}\times 100 = \frac{3}{4}\times 100 = 75\%$

13. (a); Required amount = $(50-45)\times\frac{180,00000}{360}$

$= 5\times\frac{18000000}{360} = \frac{5\times 100000}{2} = 250000$

14. (c); Required percentage = $\frac{(81-54)}{81}\times 100 = \frac{27}{81}\times 100 = \frac{100}{3} = 33\frac{1}{3}\%$

15. (b); Required amount = $(81+36)\times\frac{20000000}{360}$

$= \frac{144}{360}\times 20000000$

$= \frac{12}{30}\times 20000000 = \frac{2}{5}\times 20000000 = 8000000$

Solutions: (16 – 20)

Subjects	Year 2001	Year 2002
Arts	4200	4400
Commerce	7700	9600
Science	8400	8800
Agriculture	2450	2000
Engineering	6300	7600
Pharmacy	2100	3600
Medicine	3850	4000

16. (c); Clearly there is decrease No. of students from year 2001 to year 2002 in agriculture faculty

17. (d); Required Ratio = 2100 : 3600 = 7 : 12

18. (d); Required perecntage increase = $\frac{7600-6300}{6300}\times 100 = 20.6 \simeq 20\%$

19. (b); Required percentage = $\frac{4200+7700}{4400+9600}\times 100 = \frac{11900}{14000}\times 100 = 85\%$

20. (d); From the table, we can say, the percentage increase in medicine was minimum.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

21. (d); Required percentage

$$= \frac{(3489.5+8352)-(2932+7081.6)}{(2932+7081.6)} \times 100$$

$$= \frac{11840-10000}{10000} \times 100 = \frac{1840}{100} \approx 18\%$$

22. (b); Required percentage

$$= \frac{(815.2+632.41)+(2065.8+1232.7)}{(2923.1+7081.6)} \times 100$$

$$= \frac{4746.1}{10000} \times 100 \approx 47\%$$

23. (b); % increase in electricity = $\frac{300}{2070} \times 100 = 14\%$

% increase in investment in chemical

$$= \frac{(986.4-745.3)}{745.3} \times 100 = \frac{240}{745} \times 100 = 32\%$$

% increase in investment in solar

$$= \frac{428.6}{1363.5} \times 100 \approx 31\%$$

% increase in investment in nuclear

$$= \frac{507}{1674} \times 100 \approx 30\%$$

Clearly in chemical is the highest

24. (c); Required Ratio

$$= \frac{7081.6+8352}{(2923.1)+(3489.5)} = \frac{15430}{6410} = 2.4 \text{ times}$$

25. (d); Total Readers of Quami Tanzeem

$= 12 \times \frac{9}{18} = 6$ lakh

$\therefore \quad \frac{4}{9}x + \frac{3}{8}y = 2.50$ ... (i)

Here x and y respectively the no. of readers below 35 years and above 35 years.

$x + y = 6$ ... (ii)

Soving eq. (i) and (ii) we get

x = 3.60 lakhs

So, the total male readers (below 35 years)

$= \frac{5}{9} \times 3.60 = 2$ lakhs

26. (b); Total no. of readers for the times of India

$= \left(\frac{2.4}{3} \times 7\right) + \left(\frac{3.5}{5} \times 9\right) = 5.6 + 6.3 = 11.9$ lakh

Total no. of readers for Hindustan times

$= \frac{11.9}{20} \times 25 = 14.875$

27. (c); Required ratio $= \dfrac{2.40 \times \frac{7}{4} \times \frac{3}{7}}{1.80 \times \frac{11}{5} \times \frac{6}{11}} = 5 : 6$

28. (a); Required answer $= \frac{20}{25} \times 100 = 80$ lakh

29. (d); Here, total no. of readers below 35 years or above 35 years is not given. Therefore, the total no. of males above 35 years cannot be determined.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

30. (e); No. of students passing from ahmedabad

$= \frac{12}{5} \times 1000$

$\therefore$ total No. of students passing exam

$X = \frac{12}{5} \times 1000 \times \frac{100}{7}$

Total no of students passing exam X in chennai

$= \frac{12}{5} \times 1000 \times \frac{100}{7} \times \frac{20}{100}$

No. of boys passing from chennai

$= 1000 \times \frac{12}{5} \times \frac{100}{7} \times \frac{20}{100} \times \frac{13}{24} \approx 3715$

31. (c); No fo students passing in Delhi = $9000 \times \frac{16}{15}$

No. of girls passing from delhi

$= 9000 \times \frac{16}{15} \times \frac{5}{8} = 6000$

32. (d); We do not had the data provided in pie-chart similarly we find out which city shows the maximum percentage of girls passing. From the table, the answer is rest.

33. (b); Let the total no. of passing student = x

18% of x × $\frac{9}{16} - \frac{16}{100} \times \frac{3}{8} x = 3630 \Rightarrow x = 88000$

34. (b); No. of boys passing from the rest part of the country in X exam

= 25% of $1.20 \times \frac{5}{14} \approx 10720$

35. (e); Required difference

$= \frac{10}{20} \times \frac{9}{17} \times 17000 - \frac{8}{20} \times \frac{12}{25} \times 17000 = 4500 - 3264 = 1236$

36. (d); We don't know the exact value,

$\therefore$ Data inadequate

37. (c); No. of staff in company Q in the year

$= \frac{500}{16} \times 12 = 375$

After 20% decrease in company Q in the year 2013, No. of staff =

$\frac{80}{100} \times 375 = 300$

Percentage of staff who are at least graduate in company Q in the year 2013 = 70

∴ No. of staff who are not graduate in company Q =

$\frac{30}{100} \times 300 = 90$

38. (b); Let the no. of staff in company R in the year 2012 be x.

$x \times \frac{48}{100} = 144 \quad \Rightarrow x = 300$

∴ Required answer = 2 × 300 = 600

39. (c); M → 15 × 37 = 555

N → 22 × 52 = 1144

P → 16 × 27 = 432

Q → 12 × 36 = 432

R → 8 × 48 = 384

S → 16 × 54 = 864

T → 11 × 43 = 473

40. (a); In 2012, T → 2200

M → $\frac{2200}{11} \times 15 = 3000$

In 2014, T → 2200 × $\frac{80}{100}$ = 1760

M → 3000 × $\frac{110}{100} = 3300$

So, M + T (2014) = 1760 + 3300 = 5060

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

ONLINE TEST PROGRAM
to help boost your score in Government Examinations
TIME-BOUND TESTS • DETAILED TEST ANALYSIS
EXPLANATORY SOLUTIONS • ALL INDIA RANKING
STRICTLY BASED ON EXAM PATTERN
Adda 247
Govt. Job in Your Pocket!
COURSES
TEST SERIES
CORRESPONDENCE COURSES
E-LEARNING KIT
CLASSROOM PROGRAM
CART
MY ACCOUNT
ONLINE TEST SERIES
All Courses
Other Bank Exam (18)
INSURANCE (8)
BANK OF BARODA
NICL-AO
₹399
₹499
₹599
₹399
₹399
ADD TO CART
For Adda247 ONLINE TEST | Visit: store.adda247.com

VIDEO COURSE
by India's Top Faculties
for Bank Exams
Banking Complete Video Course
(Available in English & Hindi)
more than
150
HOURS
of video classes
Adda 247
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Previous Year Memory Based

1. (d); Required percentage $=\dfrac{\frac{31}{100}\times 35000}{\frac{15}{100}\times 35000}\times 100 = \dfrac{31}{15}\times 100 = 2.066 \times 100$

$= 206.6 = 207\%$ (Approx.)

2. (e); Total no. of males $=\left[\dfrac{70}{100}\times\dfrac{18}{100}+\dfrac{45}{100}\times\dfrac{22}{100}+\dfrac{40}{100}\times\dfrac{31}{100}+\dfrac{60}{100}\times\dfrac{15}{100}+\dfrac{75}{100}\times\dfrac{14}{100}\right]\times 35000$

$=\dfrac{35000}{10000}\times\left[70\times 18+45\times 22+40\times 31+60\times 15+75\times 14\right]$

$=\dfrac{35}{10}\left[1260+990+1240+900+1050\right] = \dfrac{35}{10}\times 5440 = 19040$

3. (c); Total no. of males in A and C

$=\left[\dfrac{70}{100}\times\dfrac{18}{100}+\dfrac{40}{100}\times\dfrac{31}{100}\right]\times 35000$

$=\dfrac{35000}{10000}\times(70\times 18+40\times 31) = \dfrac{35}{10}(1260+1240)$

$=\dfrac{35}{10}(2500) = 250 \times 35 = 8750$

4. (d); Required difference

$=\left[\dfrac{55}{100}\times\dfrac{22}{100}-\dfrac{25}{100}\times\dfrac{14}{100}\right]\times 35000$

$=\dfrac{35}{10}\left[55\times 22-25\times 14\right] = \dfrac{35}{10}\left[1210-350\right] = \dfrac{35}{10}\left[860\right] = 3010$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

5. (e); No. of females in organisation D

$$=\frac{40}{100}\times\frac{15}{100}\times35000=\frac{35}{10}\times600=2100$$

6. (b); Difference $=\frac{7}{12}\times\frac{16}{100}\times24-\frac{7}{16}\times\frac{15}{100}\times32$

$$=\frac{7\times16}{50}-\frac{7\times15}{50}=\frac{1}{50}(112-105)=\frac{7}{50}\text{ lacs}$$

$$=\frac{7\times100000}{50}=7\times2000=14000$$

7. (d); Required Ratio $=\dfrac{\frac{7}{16}\times\frac{20}{100}\times24}{\frac{7}{12}\times\frac{12}{100}\times32}=\dfrac{7\times20\times24\times12}{16\times7\times12\times32}=15:16$

CAREER POWER™
AN IIT/IIM ALUMNI COMPANY

8. (c); Required percentage $=\dfrac{\frac{4}{9}\times\frac{15}{100}\times24}{\frac{5}{9}\times\frac{18}{100}\times32}\times100=\dfrac{4\times15\times24}{5\times18\times32}\times100=50\%$

9. (a); Required percentage $=\dfrac{\frac{4}{9}\times\frac{18}{100}\times32}{32}\times100=\frac{4}{9}\times18=8\%$

10. (e); Graduate male population of state E $=\frac{9}{16}\times\frac{20}{100}\times24=2.7$ Lakh

XII std pass female population of state E

$$=32\times\frac{19}{100}\times\frac{10}{19}=3.2\text{ lakh}$$

Required ratio = 2.7 : 3.2 = 27 : 32

11. (e); Required % $= \dfrac{\frac{14}{100}\times 24}{\frac{15}{100}\times 32}\times 100 = \dfrac{14\times 24}{15\times 32}\times 100 = 70\%$

12. (b); Required % $= \dfrac{\frac{9}{19}\times\frac{19}{100}\times 32}{\frac{3}{5}\times\frac{20}{100}\times 32}\times 100 = \dfrac{9\times 19\times 5}{3\times 20\times 19}\times 100 = 75\%$

13. (c); Graduate male population of state A $= \dfrac{7}{12}\times\dfrac{16}{100}\times 24 = 2.24$ lakh

XII std male population of state A $= \dfrac{7}{16}\times\dfrac{15}{100}\times 32 = 2.1$ lakh

Sum = (2.24 + 2.1) = 4.34 lakh

Graduate female population of state A $= \dfrac{5}{12}\times\dfrac{16}{100}\times 24 = 1.6$ lakh

XII std pass female population of state A $= \dfrac{9}{16}\times\dfrac{15}{100}\times 32 = 2.7$ lakh

Now, Sum = (1.6 + 2.7) = 4.3 lakh

Required Ratio = 434 : 430 = 217 : 215

14. (a); Graduate population of state D $= \dfrac{17}{100}\times 24$

XII population of state D $= \dfrac{12}{100}\times 32$

Required ratio $= \dfrac{17}{100}\times 24 : \dfrac{12}{100}\times 32 = 17 \times 24 : 12 \times 32 = 17 : 16$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

15. (c); Required percentage = $\dfrac{\frac{3}{8}\times\frac{18}{100}\times24}{\frac{7}{16}\times\frac{20}{100}\times24}\times100 = \dfrac{1.62}{2.1}\times100 \approx 77\%$

16. (b); Required ratio = 5000 : $\dfrac{40}{100}\times35000$= 5000 : 14000 = 5 : 14

17. (a); YearsNo. of candidates qualified(in thousands)

2007 32.5% of 5000 = 1625
2008 37.5% of 10000 = 3750
2009 30% of 22500 = 6750
2010 30% of 17500 = 5250
2011 32.5% of 27500 = 8937.5
2012 22.5% of 30000 = 6750
2013 35% of 20000 = 7000
2014 40% of 35000 = 14000
Thus, Required year = 2007

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

18. (e); Required percentage $=\dfrac{30,000-20,000}{30,000}\times100 = \dfrac{100}{3} = 33\dfrac{1}{3}\%$

19. (a); No. of candidates qualified in 2012 $=\dfrac{22.5}{100}\times30,000$= 6750

20. (d); No. of candidates qualified in 2009 = $\dfrac{30}{100}\times22500=6750$

Hence, Required percentage$=\left(\dfrac{6750}{10,000}\times100\right)\%$ = 67.5%

21. (e); No. of men working in marketing department

$=\dfrac{79.2}{360}\times3250\times\dfrac{3}{5}$ = 429

22. (c); Required ratio $=\dfrac{\frac{13}{25}\times\frac{36}{360}\times3250}{\frac{7}{10}\times\frac{57.6}{360}\times3250}=\dfrac{36\times13\times10}{57.6\times7\times25}=\dfrac{13}{28}$ = 13 : 28

23. (e); Required percentage $=\dfrac{\frac{4}{5}\times3250\times\frac{136.8}{360}}{\frac{136.8}{360}\times3250}\times100=\dfrac{4}{5}\times100$ = 80%

24. (b); No. of women in IT department $=\dfrac{3}{10}\times\dfrac{57.6}{360}\times3250$ = 156

$\therefore$ Required percentage $=\dfrac{156}{3250}\times100$ = 4.8%

25. (b); No. of men working in various departments

Accounts $=\dfrac{6}{13}\times\dfrac{50.4}{360}\times3250$ = 210

Marketing $=\dfrac{3}{5}\times\dfrac{79.2}{360}\times3250$ = 429

IT $=\dfrac{7}{10}\times\dfrac{57.6}{360}\times3250$ = 364

HR $=\dfrac{12}{25}\times\dfrac{36}{360}\times3250$ = 156

Production $=\dfrac{4}{5}\times\dfrac{136.8}{360}\times3250$ = 988

$\therefore$ Total no. of men = 210 + 429 + 364 + 156 + 988 = 2147

Solution: (26 – 30)

Speed of vehicle A on Ist day = $\dfrac{832}{16}$ = 52 km/hr

Speed of vehicle A on 2nd day = $\dfrac{864}{16}$ = 54 km/h

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

Speed of vehicle B on Ist day = $\frac{516}{12}$ 43 km/h

Speed of vehicle B on 2nd day = $\frac{774}{18}$ = 43 km/h

Speed of vehicle C on Ist day = $\frac{693}{11}$ = 63 km/h

Speed of vehicle C on 2nd day = $\frac{810}{18}$ = 45 km/h

Speed of vehicle D on Ist day = $\frac{552}{12}$ = 46 km/h

Speed of vehicle D on 2nd day = $\frac{765}{15}$ = 51 km/h

Speed of vehicle E on Ist day = $\frac{935}{17}$ = 55 km/h

Speed of vehicle E on 2nd day = $\frac{546}{14}$ = 39 km/h

Speed of vehicle F on Ist day = $\frac{703}{19}$ = 37 km/h

Speed of vehicle F on 2nd day = $\frac{636}{12}$ = 53 km/h

26. (d); Speed of vehicle B on both days is 43 km/h

27. (c); Speed of A on Ist day = 52

Speed of C on Ist day = 63

Required difference = 63 – 52 = 11 km/hr.

28. (e); Speed of vehicle on 2nd day = 45 km/h

= $45 \times \frac{5}{18}$ = 2.5 × 5 = 12.5 m/s

29. (e); Required Percentage $= \left(\frac{636}{703} \times 100\right)\%$ = 90.46% ≈ 90%

30. (b); Required ratio = 51: 39 = 17 : 13

31. (c); Required Ratio $=\dfrac{\frac{7}{15}\times\frac{17}{100}\times45000}{\frac{9}{16}\times\frac{16}{100}\times45000}=\dfrac{3570}{4050}=\dfrac{357}{405}=\dfrac{119}{135}$ = 119 : 135

32. (c); No. of mobile phones sold in the month of november

$=45000\times\dfrac{12}{100}$ = 5400

No. of mobile phones sold by company A in the month of november $=\dfrac{7}{15}\times5400$ = 2520

$\therefore$ Required no. of mobile phone $=2520\times\dfrac{65}{100}$ = 1638

33. (d); No of mobile phones sold in the month of october

$=\dfrac{8}{100}\times45000$= 3600

No. of mobile phones sold by company B in the month of october

$=\dfrac{5}{12}\times3600$= 1500

Profit earned = 1500 × 433 = 649500

34. (e); Required percentage $=\dfrac{\frac{17}{100}\times\frac{8}{15}\times45000}{\frac{7}{16}\times\frac{16}{100}\times45000}\times100$

$=\dfrac{4080}{3150}\times100$= $129.52\%\approx130\%$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

35. (a); Total no of mobile phones sold in August and September by company B

$$=\frac{5}{9}\times\frac{22}{100}\times45000+\frac{2}{5}\times\frac{25}{100}\times45000=5500+4500=10,000$$

36. (b); Required difference

$$=\frac{1}{2}\times\frac{26}{100}\times700-\frac{5}{14}\times\frac{28}{100}\times700=91-70=21$$

37. (a); Required percentage $=\dfrac{\frac{3}{8}\times\frac{32}{100}\times700}{\frac{3}{7}\times\frac{14}{100}\times700}\times100=\dfrac{84-42}{42}\times100=100\%$

38. (d); Total no. of cars in state 3 = $\frac{32}{100}\times700=224$

No. of diesel cars in state 3 $=\frac{5}{8}\times224=140$

No. of diesel engine AC cars in state 3 $=140\times\frac{25}{100}=35$

Required cars = 140 – 35 = 105

39. (e); Required difference $=\frac{32}{100}\times700-\frac{9}{14}\times\frac{28}{100}\times700=224-126=98$

40. (b); Average no. of petrol engine cars

$$=\left[\frac{4}{7}\times\frac{14}{100}+\frac{9}{14}\times\frac{28}{100}+\frac{3}{8}\times\frac{32}{100}+\frac{1}{2}\times\frac{26}{100}\right]\times\frac{700}{4}=\frac{357}{4}=89.25$$

Adda 247
Govt jobs coaching, now in your Pocket!
Download the Adda 247 App and boost your preparation.
GET IT ON Google Play
Give a missed call on 8099-931-931 to download the App.

ONLINE TEST PROGRAM
to help boost your score in Government Examinations
TIME-BOUND TESTS • DETAILED TEST ANALYSIS
EXPLANATORY SOLUTIONS • ALL INDIA RANKING
STRICTLY BASED ON EXAM PATTERN
Adda 247
Govt. Job in Your Pocket!
COURSES
TEST SERIES
CORRESPONDENCE COURSES
E-LEARNING KIT
CLASSROOM PROGRAM
CART
MY ACCOUNT
ONLINE TEST SERIES
All Courses
SBI (8)
IBPS
Other Bank Exam (18)
SSC (15)
INSURANCE (8)
Bank Special
BANK OF BARODA
NICL-AO
₹399
₹499
₹599
₹399
₹399
ADD TO CART
For Adda247 ONLINE TEST | Visit: store.adda247.com

Practice Solutions Based on Latest Pattern 2016 – 2017

1. (c); $55\frac{5}{9}\% = \frac{5}{9}$

$\because$ C.P. = 900 Rs.

M.P. $= 900 + \frac{5}{9} \times 900 = 1400$ Rs.

Then,

	CP	MP	SP
Gaurav	900	1400	14 × 68 = 952
Bikash	900	1400	14 × 72 = 1008
Mohit	900	1400	14 × 72 = 1008
Neeraj	900	1400	14 × 84 = 1176
Bikash	900	1400	x

Excluding Bikram

Total profit = 52 + 108 + 108 + 276 = 544

Profit to be earned by Bikram = 624 – 544 = 80

$\therefore$ S.P. by Bikram = 980

Re quired discount $= \frac{1400 - 980}{1400} \times 100 = \frac{420}{14} = 30\%$

2. (d); Let MP of item IV = 100a

SP of item IV by Mohit = 84a

SP of item IV by Bikram = 96a

Let S.P. of item IV by Neeraj = xa

$\therefore$ a(84 + x) = 1890 × 2 ... (i)

and a(96 + x) = 2100 × 2 ... (ii)

From eqn. (i) and eqn. (ii)

$\frac{84 + x}{96 + x} = \frac{9}{10}$

840 + 10x = 9 × 96 + 9x

x = 24

And a = 35

∴ Required SP = 24 × 35 = 840 Rs.

3. (b); Let S.P. of item I by Gaurav = 500x

Let S.P. of item IV by Gaurav = 600x

$\therefore$ C.P. of item I by Gaurav $= \frac{100}{125} \times 500x = 400x$

500x – 400x = 1600 ⇒ 100x = 1600 ⇒ x = 16

∴ S.P. of item IV by Gaurav = 600 × 16 = 9600

C.P of item IV by Gaurav $= \frac{100}{120} \times 600x = 500x$

= 500 × 16 = 8000

∴ Total profit = 1600 + 1600 = Rs. 3200

4. (a); For Bikash →

CP	MP	SP
$\frac{100}{(100+X)}72a$	100a	72a

For Neeraj →

CP	MP	SP
$\frac{100}{(110+X)} \times 82a$	100a	82a

Given,

$$\frac{\frac{100}{100+x} \times 72a}{\frac{100}{100+x} \times 82a} = \frac{432}{451} \qquad \Rightarrow \frac{(110+x)}{(100+x)} = \frac{12}{11}$$

1210 + 11x = 1200 + 12x ⇒ x = 10

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

5. (e); Let CP of item II by Gaurav = 80x

$\therefore$ MP of item II by Gaurav $=\frac{125}{100}\times 80x = 100x$

SP of item II by Gaurav = 64x

(80x – 64x) = 320

16x = 320

x = 20

$\therefore$ MP of item II = Rs. 2000

Let S.P. of item II by Bikash = y

$$\frac{20(64+78+76+93)+y}{5}=1440$$

6220 + y = 7200 $\Rightarrow$ y = 980

Required discount $=\frac{2000-980}{2000}\times 100=51\%$

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

6. (a); Speed of boat in still water on Friday = 26 km/hr

$$15\frac{5}{13}\% = \frac{2}{13}$$

$$\therefore 15\frac{5}{13}\% \text{ of } 26 = 4$$

Speed of boat in still water on Saturday = 26 – 4 = 22 km/hr

$$\frac{17\times 18}{26-1}=\frac{17\times 12}{22+x}\times\frac{3}{2}$$

x = 3 km/hr

Required time $=\frac{75}{22+3}=3$ hrs.

7. (c); $\frac{12\times12}{x+3}=\frac{17\times18}{13.75-1}-12$

$\frac{144}{x+3}=12$ $\Rightarrow 12x + 36 = 144 \Rightarrow x = 9$ km/hr

Required upstream speed = 9 – 3 = 6 km/hr

8. (a); $\frac{14\times12}{x+2}=\frac{14\times18}{16-4}$ $\Rightarrow x + 2 = 8 \Rightarrow x = 6$ km/hr

9. (b); $\frac{12\times12}{x+3}=\frac{16\times18}{x-3}\times\frac{1}{3}$

$6x – 18 = 4x + 12 \Rightarrow x = 15$ km/hr

10. (d); Speed of boat in still water on Sunday = 12 km/hr

Speed of boat in still water on Saturday = 16 km/hr

$2\times\frac{10\times18}{16-x}=\frac{17\times18}{7}$ $\Rightarrow \frac{140}{17}=16-x$ $\Rightarrow x=7\frac{13}{17}$ km /hr

11. (a); Investment made by Shailesh and Gaurav together

$=7350\times\frac{100}{35}=21000$

Gaurav's investment $=\frac{3}{7}\times21000=9000$

Gaurav's and Aman's combined investment

$=\frac{9000}{5}\times9=16200$

Total profit for them $=\frac{25}{100}\times16200=4050$

Ratio of their share = 5 × 2 : 4 × 5 = 1 : 2

Gaurav's share $=\frac{1}{3}\times4050=1350$ Rs.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

12. (b); Ratio of Abhi's and Aman's share = 5 × 3 : 7 × 5 = 3 : 7

Total profit for both $=\frac{2160}{3}\times 10=7200$

Total investment of both $=7200\times\frac{100}{30}=24000$

Abhi's investment $=24000\times\frac{5}{12}=10,000$

Abhi investment with Shailesh $=10000\times\frac{3}{2}=15000$

Total investment made by Abhi & Shailesh together

$=\frac{15000}{2}\times 5=37,500$

Profit earned $=\frac{1}{5}\times 37,500=7500$

Shailesh's share $=7500\times\frac{18}{40}=3375$

13. (c); Profit earned by Shailesh in partnership with Aman

$=\frac{7}{40}\times\frac{40}{100}\times 18000=1260$

Abhi's profit with Gaurav = 1260 × 2 = 2520

Total profit for Abhi and Gaurav $=2520\times\frac{6}{5}=3024$

Total investment by them together $=3024\times\frac{100}{21}=14,400$ Rs.

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

14. (d); Investment of Shailesh & Abhi together $=9000\times\frac{100}{25}=36,000$

Profit earned by Abhi in partnership with Shailesh

$=\frac{22}{40}\times\frac{20}{100}\times 36,000=$ Rs. 3960

15. (a); Let, investment made by Aman and Abhi together be 12x
And investment made by Gaurav and Aman together be 9y
According to the question,

$\frac{30}{100}\times 12x=\frac{25}{100}\times 9y$ or, $x=\frac{5}{8}y$

Profit earned by Aman in partnership with Abhi

$=\frac{35}{50}\times\frac{30}{100}\times 12x=\frac{63}{25}x$

Profit earned by Aman in partnership with Gaurav

$=\frac{2}{3}\times\frac{25}{100}\times 9y=\frac{3}{2}y$

Re quired ratio $=\frac{\frac{63}{25}x}{\frac{3}{2}y}=\frac{\frac{63}{25}\times\frac{5}{8}y}{\frac{3}{2}y}=\frac{21}{20}$

16. (c); Total time taken by E $=500\times\frac{14}{100}=70$ hr

Time taken by car $=70\times\frac{4}{7}=40$ hr

Distance travelled by car = 40 × 60 = 2400

Distance travelled by train $=\frac{2400}{60}\times 100\times\frac{40}{100}=1600$ km

Speed of train $=\frac{1600}{30}=53\frac{1}{3}$ km /hr

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

17. (c); Total time taken by D $=500\times\frac{12}{100}=60$ hr

Now

According to the question,

$x+\frac{x}{2}=60$ where x = time taken by train

$\Rightarrow$ x = 40

Time taken by car = 60 – 40 = 20 hr

Distance travelled by train = 22 × 40 = 880 km

Distance travelled by car $=\frac{880}{55}\times\frac{45}{100}\times100=720$ km

Speed of D by car $=\frac{720}{20}=36$ km /hr

CAREER POWER™ AN IIT/IIM ALUMNI COMPANY

18. (b); Time taken by B, C and D together $=500\times\frac{42}{100}=210$ hr

Time taken by E, F, G and H together $=500\times\frac{48}{100}=240$ hr

Let Avg. speed of B, C and D = x

Let Avg. speed of E, F, G and H = y

According to the question,

210 × x = 240 × y

$\frac{x}{y}=\frac{240}{210}=\frac{8}{7}$

Required answer = 8 : 7

19. (e); Time taken by A $=500\times\frac{10}{100}=50$ hr

Time taken by C $=500\times\frac{15}{100}=75$ hr

Let Avg. speed of A = 4x
Let Avg. speed of B = 3x
According to the question,
75 × 3x – 50 × 4x = 500
x = 20
Avg. speed of A = 40 × 20 = 80 km/hr
Total distance travelled by A = 80 × 50 = 4000 km
Let the speed of A by car = x km/hr
According to the question,

$$\frac{4000}{\frac{2800}{x}+\frac{1200}{120}}=80$$

S = 70 km/hr

20. (b); Time taken by G $=500\times\frac{9}{100}=45$

Avg. speed of G $=\frac{2250}{45}=50$ km /hr

Distance travelled by train $=2250\times\frac{60}{100}=1350$

Time taken by train $=\frac{1350}{45}=30$ hr

Time taken by car = 45 – 30 = 15 hr
Distance travelled by car = 2250 – 1350 = 900

Speed of G by car $=\frac{900}{15}=60$ km /hr

Adda247 | No. 1 APP for Banking & SSC Preparation
Website: store.adda247.com | Email: ebooks@adda247.com

CAREER POWER AN IIT/IIM ALUMNI COMPANY A unit of Adda 247 | bankersadda.com A Unit of Adda247 | Adda 247 Govt. Job in Your Pocket! | sscadda.com A Unit of Adda247

Fulfill your Dream of Government Job visit: careerpower.in

Chapter 17

Data Sufficiency

VIDEO COURSES
for Government Exams

Adda 247

From the oldest and most trusted name in Exam Preparation which gave us Career Power, Bankersadda, Sscadda, here is the latest offering – Video Courses that are tailor-made for the Govt. Job aspirants of digital India. Various banking and SSC exams are conducted online with regular changes to exam pattern and level of questions. We understand the changing needs of the students and have devised a unique solution, making preparation easy, cost-effective and efficient.

Video courses for banking and SSC consist of exhaustive video lectures for government exams which are pre-loaded on an SD card. We offer these courses in two variants: [Android Tab + SD-Card] or [SD Card only]. The SD Card can be run on your personal android device as well. The video courses will run on the Adda247 mobile app, the number one App for Bank and SSC exam preparation.

What you get?

Available Courses

Banking Complete Video Course | Maths Video Course for SSC Exams | Maths + English Video Course for SSC Exams | SSC Complete Video Course

To Purchase visit : elearning.adda247.com

For any query : Call us at +91-90691 42412 • Email us at elearning@adda247.com

Chapter 17

Data Sufficiency

In Data Sufficiency, a question, followed by some statements, is given. You are required to determine whether the data given in one or more statements is sufficient to answer the question. Then you have to answer the question based on the given options. Remember that it is enough to conclude that the data provided is sufficient to answer the given question or not. Do not waste time in trying to arrive at the final answer as it is not asked.

Steps in solving Data Sufficiency questions:

(1) Find out whether the data given in the first statement is sufficient to answer the given question.

(2) If the first statement is not sufficient to answer the question, move on to the second statement and determine whether the data given in the second statement is sufficient to answer the question.

(3) If you are unable to find the answer using either of the statements alone, try to find out if the two statements combined together are sufficient to answer the question.

(4) Select an answer according to the given options.

Strategies for solving Data Sufficiency questions:

1 Understand and memorise the Data Sufficiency answer choices: The answer choices for Data Sufficiency questions generally do not change. Understanding and then learning them will make attempting these questions easier. Let us understand the option statements.

	Given Option	Its Meaning
(A)	Statement 1 alone is sufficient to answer the question but statement 2 alone is not sufficient to answer the question.	Out of the given statement only statement 1 alone can answer the question.
(B)	Statement 2 alone is sufficient to answer the question but statement 1 alone is not sufficient to answer the question.	Out of the given statements only statement (2) alone can answer the question.
(C)	Both the statements taken together are sufficient to answer the question, but neither of the statements alone is sufficient to answer the question.	The question can be solved only if the data given in both the statements is used together. The question cannot be solved using either of the statements alone.
(D)	Either statement by itself is sufficient to answer the question.	The question can be solved by using any one of the statements alone.
(E)	Statements (1) and (2) taken together are not sufficient to answer the question, requiring more. data pertaining to the problem	The question cannot be solved even if we use the data given in both the statements together.

what does it mean that a statement is "sufficient"?

'Sufficient' does not mean that a statement is right or true. It just means that the question can be solved using that statement.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

(2) Assumptions are not allowed:

Do not use general knowledge to solve Data Sufficiency questions.

Let us understand this with an example.

Example: Is New york the most populated city in the US?

Statement 1: The capital of the US is the most populated city in the US.

Statement 2: New York is the capital.

In this case, if you choose option C i.e., "Both the statements taken together are sufficient to answer the question," be careful, it is not given in statement 2 that New York is the capital of the US.

We can also see that statement 1 alone cannot answer the question, as it is not given that New York is the capital of the US.

However, universal facts like mathematical principles can be used, as they are not general knowledge stuff.

(3) Elimination method:

As you progress through each statement, you may eliminate options. Just solve for one of the statements and the job is half done.

if statement 1 is sufficient: Eliminate choices B, C and E which require (1) to be insufficient.

if statement 1 is insufficient: Eliminate choices A and D, which require (1) to be sufficient.

if statement 2 is sufficient: Eliminate choices A, C and E which require (2) to be insufficient.

if statement 2 is insufficient: Eliminate choices B and D, which require (2) to be sufficient.

(4) Analyze questions in terms of sufficiency:

Do not think in terms of "What is exact value?",

"is this true or false?" instead, review questions in terms of one question, "is there enough information to answer the question?"

Look at each statement and ask yourself if it provides enough information to arrive at a conclusion.

Basic knowledge of Arithmetic, Algebra, Geometry, Statistics and other topics of Mathematics is a prerequisite to understand this chapter. So, learn all the basic and necessary shortcut formulae related to above topics of Mathematics.

Types of Questions

Direction (1 - 5): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

Give answer

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient

(c) if both Statement I and II together are needed to answer the question

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question

(e) if you cannot get the answer from the Statements I and II together but need even more data

1. What is the per cent profit earned by selling a car for Rs.640000?

   I. The amount of profit earned on selling the car was Rs. 320000.

   II. The selling price of the car was twice the cost price.

Sol. (d); We know that,

Profit percent

$$=\left(\frac{\text{Profit}}{\text{CP}}\right)\times 100\% = \left(\frac{\text{SP}-\text{CP}}{\text{CP}}\right)\times 100\%$$

From statement I

CP = 640000 – 320000 = 320000

$$\text{Profit}\% = \frac{320000\times 100}{320000} = 100\%$$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

From statement II,

$$CP = \frac{SP}{2} = \frac{640000}{2} = 320000$$

$$\text{Profit\%} = \frac{320000}{320000} \times 100 = 100\%$$

Thus we can find the profit percent by statement I alone and statement II alone.

2. In how many days can B alone complete the work?
   I. B and C together can complete the work in 8 days.
   II. A and B together can complete the work in 12 days.

Sol. (e); We can't find the number of days taken by B alone to complete the work using both the statements together but need even more data.

3. What is the rate of interest percent per annum?
   I. The amount doubles itself in 10 yr.
   II. The simple interest accured in 5 yr. is Rs.5000.

Sol. (e); From statement I

We cannot find R as we do not know the nature of interest, i.e. whether it is SI or CI.

From statement II,

$$SI = \frac{PRT}{100} \Rightarrow 5000 = \frac{P \times R \times 5}{100}$$

$\therefore$ PR = 100000

Thus, we cannot find the value of R using statement I and II.

4. What is the speed of the car?
   I. The car covers a distance of 135 km in 3 h.
   II. The car covers a distance of 270 km in 6 h.

Sol. (d); We know that, speed of car

$$= \frac{\text{Distance covered by it}}{\text{Time taken by it}}$$

From Statement I

$$\text{speed of car} = \frac{135}{3} = 45 \text{ km/h}$$

From Statement II

speed of car $= \frac{270}{6} = 45$ km / h

Thus, either only statement I alone on only statement II alone is sufficient to answer the question.

5. The ages of Pradumn and Gunit are in the ratio of 7 : 5. What is the age of Pradumn?
   I. The ages of Pradumn and Nandini are in the ratio of 3 : 1.
   II. After 7 yr, the ratio of Pradumn's and Aviral's ages will be 4 : 3.

Sol. (e); Given, $\frac{\text{Pradumn}}{\text{Nandini}} = \frac{7}{5}$

From Statement I

$\frac{\text{Pradumn}}{\text{Nandini}} = \frac{3}{1}$

From statement II, $\frac{\text{Pradumn}+7}{\text{Aviral}+7} = \frac{4}{3}$

From all the above three equation, we can't find the age of Pradumn.

Foundation

Direction (1): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient
(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient
(c) if the Statement I and II together are needed to answer the question
(d) if either the Statement I alone or Statement II alone is sufficient to answer the question
(e) if you cannot get the answer from the Statement I and II together but need even more data

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

1. The ages of P and G are in the ratio of 7 : 5. What is the age of P?
   I. The age of P and N are in the ratio of 3 : 1
   II. After 7 yr, the ratio of ages of P and G will be 4 : 3.

Direction (2-6): Each of the following question is followed by two Statements.

Give answer

(a) if Statement I alone is sufficient to answer the question
(b) if Statement II alone is sufficient to answer the question
(c) if both Statements I and II together are necessary to answer the question
(d) if either the Statement I alone or Statement II alone is sufficient to answer the question
(e) if both Statements I and II together are not sufficient to answer the question

2. Is b positive?
   I. a + b is positive. II. a – b is positive
3. In a general body election, 3 candidates p, q and r were contesting for a membership of the board. How many votes did each receive?
   I. p received 17 votes more than q and 103 votes more than r.
   II. Total votes cast were 1703.
4. Total marks obtained by P, Q, R and S in Mathematics is 360. How many marks did P secure in Mathematics?
   I. P secured one-third marks of the total of Q, R and S.
   II. Average marks obtained by Q and R are 20 more than that secured by S.
5. How many ice cubes can be accommodated in a container?
   I. The length and breadth of the container is 20 cm and 15 cm, respectively.
   II. The edge of the ice cube is 2 cm.
6. Sujata is the eldest daughter. What is the current age of her father?
   I. Current age of Sujata is 25 yr. and current age of her sister Sangeeta is 20 yr.
   II. Sangeeta's current age is one-third of father's age five years before.

Direction (7 - 20): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

Give answer

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient.

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient.

(c) if both Statement I and II together are needed to answer the question.

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question.

(e) if you cannot get the answer from the Statements I and II together but need even more data.

7. What is Mini's present age?
   I. Mini is 3 yr. older than Priya.
   II. The ratio between Priya's and Aishwary's age is 3 : 4, respectively.

8. How many marks did Anand get in Biology?
   I. Anand got 42 marks in English which were half the marks he got in Biology.
   II. Anand's marks in Biology were 14% of the total marks he got in all the subjects together.

9. In how many days 14 men can complete a piece of work?
   I. If 18 women can complete the same piece of work in 24 days.
   II. If 28 children can complete the same piece of work in 56 days.

10. How many people are computer experts in the organisation?
   I. Each computer expert must conduct atleast 3 programs related to computers.
   II. Organisation conducts 30 programs related to computers.

11. What is the product of X and Y?
   I. Y = X - 28 II. – 42 - 12 = X

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | Email:ebooks@adda247.com

12. What is the perimeter of the square?
    I. The measure of one of its sides is given.
    II. The measure of its diagonal is given.
13. When one ball is drawn at random from an urn containing 25 balls, what is the chance that it is red?
    I. The urn contains 10 yellow and 8 green balls.
    II. The urn contains all coloured balls.
14. What is the perimeter of the rectangle?
    I. The area of the rectangle is 252 sq. m.
    II. The ratio of length to breadth of the rectangle is 9 : 7, respectively.
15. What is the area of the circle?
    I. The breadth of a rectangle is three-fourth the radius of the circle.
    II. The radius of the circle is equal to the side of a square of area 144 sq cm.
16. What is the cost of three tables and two chairs?
    I. Cost of four chairs is twice the cost of three tables.
    II. Cost of two tables is equal to cost of one chair, i.e. Rs. 500
17. In country S, if 60% of the women are aged 18 and above are in the labour force, how many million women are in the labour force?
    I. In country S, women comprise 45% of the labour force.
    II. In country S, there are no women below 18 yr of age in the labour force.
18. Kartik put 12 cards on a table, some face up and the rest face down. How many were put face down?
    I. Kartik put an even number of the cards face up.
    II. Kartik put twice as many of the cards face up as she put face down.
19. What is the value of n?
    I. $3n + 2m = 18$
    II. $n - m = 2n - (4+m)$
20. Is w an integer?
    I. 3w is an odd number.
    II. 2w is an even number.

Adda 247
VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than
200
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Adda 247
VIDEO COURSE
by India's Top Faculties
for Bank Exams
Banking Complete Video Course
(Available in English & Hindi)
more than
150
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

Moderate

Direction (1 – 3): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient

(c) if the Statement I and II together are needed to answer the question

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question

(e) if cannot get the answer from the Statement I and II together but need even more data

1. If C_1 and C_2 are the circumferences of the outer and inner circles respectively, then what is the ratio of $C_1 : C_2$?
   I. The two circles are concentric.
   II. The area of ring is $\frac{2}{3}$ of the outer circle.
2. The total of the present ages of A, B, C and D is 96 yr. What is B's present age?
   I. The average age of A, B and D is 20 yr.
   II. The average age of C and D is 25 yr.
3. Deepak's marks in Hindi are 15 more than the average marks obtained by him in Hindi, Economics, Sociology and Philosophy. What are his marks in Philosophy?
   I. The total marks obtained by him in Hindi and Philosophy together is 112.
   II. The difference between the marks obtained by him in Sociology and Economics is 12.

Direction (4 - 13): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements

are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers. Give answer

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient

(c) if both Statement I and II together are needed to answer the question

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question

(e) if you cannot get the answer from the Statements I and II together but need even more data

4. What is the value of the two digit number?
   I. The product of the digits is 72 and the difference between the digit is 1.
   II. The digit at the unit place is greater than the other.
5. What is the rate of interest per annum?
   I. An amount of Rs. 6200 fetches simple interest of R s. 1736 in 2 yr.
   II. An amount of ‘4500 fetches compound interest of Rs. 1348.2 in 2 yr.
6. What is the speed of the boat in still water?
   I. The boat travels at the speed of 4 km/h upstream.
   II. The boat travels at the speed of 6km/h downstream.
7. What is the volume of a conical vessel?
   I. The perimeter of the base of the vessel is 64 inches.
   II. The volume of the vessel is 1/3rd of the volume of a cylinder of the same base and height.
8. What will Aishwary’s age be 5 yr from now?
   I. Aishwary’s present age is twice the Vaibhav’s present age.
   II. Vaibhav, who is half of Aishwary’s present age, was 21 yr. old, 5 yr. ago.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

9. In how many hours can A alone complete the piece of work?
   I. B alone can complete the piece of work in 28 h.
   II. A, B and C together can complete the piece of work in 18 h.
10. What is the rate of interest percent per annum?
   I. An amount doubles itself in 5 yr. at simple interest.
   II. Simple interest of Rs. 1600 is obtained in 2 yr. on the principle of Rs. 2240.
11. Three numbers are in geometric progression and the least of them is 1. Find the middle number.
   I. The sum of the numbers is 21.
   II. The product of the number is 64.
12. What will be Suraj's age after 8 yr.?
   I. The ratio between Khushi's and Suraj's present age is 4 : 7, respectively.
   II. Khushi is 15 yr. younger than Suraj.
13. At a certain university, if 50% of the people who inquire about admission policies actually submit applications for admission, what per cent of those who submit applications for admission enroll in classes at the university?
   I. Fifteen percent of those who submit applications for admission are accepted at the university.
   II. Eighty percent of those who are accepted send a deposit to the university.

Direction (14 - 18): In each of the following questions, a question is followed by information given in three Statement I, II and III. You have to study the question along with the statements and decide the information given in which of the statement(s) is necessary to answer the question.

14. In how many days 10 women can finish the work?
   I. 10 men finish the work in 6 days.
   II. 10 women and 10 men finish the work in $3\frac{3}{7}$ days.
   III. If 10 men work 3 days and after that 10 women are deployed to work for men, the rest work is finished in 4 days.

(a) I and II (b) Any two of three (c) I and III
(d) II and III (e) None of these

15. What is the present age of Sabir?
I. The present age of Sabir is half of his father's age.
II. After five years, the ratio of ages of Sabir and his father is 6 : 11.
III. Sabir is younger to his brother by five years.
(a) I and II (b) I and III (c) II and III
(d) All of these (e) Cannot be determined

16. What is the two digit number?
I. The difference between the number and the number formed by interchanging the digit is 27.
II. The difference between two digits is 3.
III. The digit at unit's place is less than that at ten's place by 3.
(a) I and II (b) I and either II or III
(c) I and III (d) All of these
(e) None of these

17. What is the rate of interest per cent per annum?
I. An amount doubles itself in 5 yr. on simple interest.
II. Difference between the compound interest and the simple interest earned on a certain amount in two years is ' 400.
III. Simple interest earned per annum is '2000
(a) Only I (b) II and III
(c) Any two of three (d) I and III (e) Either I or II and III

18. What is the cost of flooring the rectangular hall?
I. Length and the breadth of the hall are in the ratio of 3 : 2.
II. Length of the hall is 48 m and cost of flooring is '850 per sq m.
III. Perimeter of the hall is 160 m and cost of flooring is ' 850 per sq m.
(a) I and II (b) I and III (c) Only III
(d) I and either II or III (e) Any two of the three

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

Direction (19 – 20): Each question consists of a problem followed by two statements numbered as I and II. Decide whether the data in the statements are sufficient to answer the question.

Give answer

(a) if Statement I alone is sufficient but Statement II alone is not sufficient to answer the question.

(b) if Statement II alone is sufficient but Statement I alone is not sufficient to answer the question.

(c) if both Statement taken together are sufficient to answer the question but neither statement alone is sufficient

(d) if Statement I and II together are not sufficient and additional data is needed to answer the question.

(e) If either the statement I alone or statement II alone is sufficient to answer the question.

19. What is the ratio of male to female officers in the police force in town T?

I. The number of female officers is 250 less than half the number of male officers.

II. The number of female officers is 1/7 the number of male officers.

20. If x and y are both positive integers, then how much greater is x than y?

I. $x + y = 20$ II. $x = y^2$

Difficult

Direction (1): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient

(c) if the Statement I and II together are needed to answer the question
(d) if either the Statement I alone or Statement II alone is sufficient to answer the question
(e) if you cannot get the answer from the Statement I and II together but need even more data

1. Is $\frac{1}{x}$ greater than $\frac{1}{y}$?
   I. x is greater than 1.
   II. x is less than y.

Direction (2 – 6): Each of these examples is followed by three statements. You have to study the question and all the three statements given to decide whether any information provided in the statement(s) is redundant and can be dispensed with while answering the given question.

2. What is the area of ΔABC right angled at B.
   I. Length of AC is 5 cm.
   II. Perimeter of the triangle is four times of BC.
   III. $\angle BCA = 60°$
   (a) Only I (b) Only II (c) Only III
   (d) Either II or III (e) All I, II and III are required
3. At what time will the train reach city X from city Y?
   I. The train will pass the other train of equal length of 200 m, running opposite in direction in 15 s.
   II. The train leaves city Y at 7.15 am for city X situated at a distance at 560 km.
   III. The 200 m long train crosses a signal pole in 10 s.
   (a) Only I (b) Only II
   (c) Only III (d) II and III
   (e) All I, II and III are required to answer the question.
4. What will be the sum of the ages of father and the son after five years?
   I. Father's present age is twice the present age of son.
   II. After ten years, the ratio of father's age to the son's age will become 12 : 7.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

III. Five years ago, the difference between the father's age and son's age was equal to son's present age.

(a) Only I or II (b) Only II or III (c) Only I or III
(d) Only I (e) Only I or II or III

5. 12 men and 8 women can complete a piece of work in 10 days. How many days will it take for 15 men and 4 women to complete the same work?

I. 15 men can complete the work in 12 days.
II. 15 women can complete the work in 16 days.
III. The amount of work done by a woman is three fourth of the work done by a man in one day.

(a) Only II (b) Only III (c) Only II or III
(d) Only I or II or III (e) Any two of the three

6. What is the length of a running train P crossing another running train Q.

I. These two trains take 18 s to cross each other.
II. These trains are running in opposite direction.
III. The length of the train Q is 180 m

(a) Only I (b) Only II (c) Only III
(d) All I, II and III are required
(e) Cannot be answered even with the help of three statements.

Direction (7): Question given below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

Give answer

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient
(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient
(c) if both Statement I and II together are needed to answer the question

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question

(e) if you cannot get the answer from the Statements I and II together but need even more data

7. The difference between the compound interest and the simple interest earned on a sum of money at same rate of interest for 3 yr. is ‘76.25. What is the sum?

   I. The simple interest earned in 3 yr is ‘15000.

   II. Rate of interest per annum is 5%.

Direction (8–11): Each of questions given below is followed by three statements. You have to study the question and all the three statements given to decide whether any information provided in the statement(s) is/ are redundant and can be dispensed with while answering the given question.

8. What is the amount saved by Nishant per month from his salary?

   I. Nishant spends 25% of his salary on food, 35% on medicine and education.

   II. Nishant spends Rs. 4000 per month on food and 15% on entertainment and saves the remaining amount.

   III. Nishant spends Rs. 2500 per month on medicine and education and saves the remaining amount.

   (a) Only I (b) Only III (c) Both II and III

   (d) Only II or III (d) None of these

9. What is the rate of interest per annum?

   I. The amount becomes Rs. 11025 at compound interest after 2 yr.

   II. The same amount with simple interest becomes Rs. 11000 after two years.

   III. The amount invested is Rs. 10000.

   (a) Only I or II or III (b) Only I or II

   (c) Only II or III (d) Only I or III

   (d) All I, II and III are required to answer the question.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

10. What is the ratio of the present age of Rohan and his father?
    I. Five year ago, Rohan's age was one-fifth of his father's age.
    II. Two years ago, the sum of the ages of Rohan and his father was 36.
    III. The sum of the ages of Rohan, his mother and his father is 62.
    (a) Only I (b) Only I or II (c) Only III
    (d) Only II or III (d) Only I or III
11. What will be the share of Q in the profit earned by P, Q and R together?
    I. P, Q and R invested total amount of Rs. 25000 for a period of two years.
    II. The profit earned at the end of two years is 30%.
    III. The amount invested by Q is equal to the amount invested by P and R together.
    (a) Only I (b) Only II (c) Only III
    (d) All I, II and III are required to answer the question.
    (e) None of these

CAREER POWER™

Direction (12): Each of these question is followed by two Statements marked as I and II. Decide whether the data provided in the statements is sufficient to answer the question. Mark answer as

Give answer

(a) if the data in both the statement is required to answer the question.
(b) if the data in statement II alone is sufficient to answer the question, while the data in Statement I alone is not sufficient to answer the question.
(c) if the data in Statement I alone is sufficient to answer the question, while the data in Statement II alone is not sufficient to answer the question.
(d) if the data in both the statements together is not sufficient to answer the question.
(e) If either of the statements is sufficient to answer the question.

12. Ms Unique Motors sold 80 per cent of the cars in its inventory during September. What was the total revenue from the sales of cars?

I. All but 60 cars in the showroom inventory were sold during September.

II. Cars were sold for an average price of Rs.4.5 lakh during September.

Direction (13): The following questions are accompanied by three statements I, II and III. You have to determine which statement(s) is/are sufficient/necessary to answer the questions and mark your answer accordingly.

13. How much minimum marks is required to pass the examination?

I. Student A secured 38% in the examination and failed by 8 marks. Student B secured 42% marks in the same examination and got 12 more than the minimum pass marks.

II. Student A secured 35% of the total marks in the examination and failed by 23 marks. If he had secured 25 more marks, his percentage of marks would have been 40%.

III. A student will be declared passed, if he secures 39.60% of the total marks.

(a) Any two (b) Only I (c) III and either I or II
(d) Either I or II (e) None of these

Direction (14-15): Each of the following has a question with three statements numbered I, II and III. Decide data in which of statements are sufficient to answer the question.

14. How much will be the cost of carpeting a rectangular hall?

I. Perimeter of a rectangle is 60 m.

II. Angle between width and hypotenuse is 60°.

III. The cost of carpeting the surface floor is Rs. 125 per sq.

(a) Both II and III (b) Both I and II
(c) Both I and III or both II and III
(d) All the three statements, I, II and III together are necessary for answering the question
(e) None of these

15. In how many days can a work be completed by A and B together?

I. A alone can complete the work in 8 days.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

II. If A alone works for 5 days and B alone works for 6 days the work gets completed.
III. B alone can complete the work in 16 days.
(a) II and either I or III (b) Any two of the three
(c) I and II (d) II and III
(e) All the statement I, II and III together are necessary for answering the question.

Direction (16): The following questions are accompanied by three statements. You have to determine which statement(s) is/are sufficient/necessary to answer the questions and mark you answer accordingly.

16. What is the rate of interest per annum?
I. An amount doubles itself at simple interest in 10 yr.
II. Difference between the compound interest and simple interest on an amount of Rs. 15000 in 2 yr. is Rs. 150.
III. The compound interest accured in 8 yr. is more than the amount (principal).
(a) Only I (b) Only II (c) II and III
(d) I and III (e) Only either I or II

CAREER POWER AN IIT/NIT ALUMNI COMPANY

Direction (17-18): Each question is followed by three statements. You have to study the question and all the three statements given and decide whether any information provided in the statements(s) is redundant and can be dispensed with while answering the questions.

17. Is the average of the largest and the smallest of four given numbers greater than the average of the four numbers?
I. The difference between the largest and the second largest number is less than the difference between the second largest and the second smallest number.
II. The difference between the largest and the second largest number is greater than the difference between the second smallest and the smallest number.
III. The difference between the largest and the second smallest number is greater than the difference between the second largest and the smallest number.

(a) Only I (b) Either II or III (c) I and either II or III
(d) Any two of them (e) None of these

18. What is the monthly income of Mr. X?
    I. Mr. X spends 85% of his income on various items and remaining amount is saved.
    II. Monthly savings of Mr. X are Rs. 4500.
    III. Out of the total money spent by Mr. X in a month, one-fifth is spent on food and remaining amount of Rs. 20400 on other items.

(a) Only II (b) Either III (c) Only either II or III
(d) Question cannot be answered even with the information in all three statements.
(e) None of above

Direction (19): Each of these questions consists of a question and two Statements I and II. Decide whether the data provided in the Statements are sufficient to answer the question.

Give answer

(a) if the data in Statement I alone is sufficient to answer the question, while the data in Statement II alone is not sufficient to answer the question
(b) if the data in Statement II alone is sufficient to answer the question, while the data in Statement I alone is not sufficient to answer the question.
(c) if the data in both Statements I and II are required to answer the question
(d) if the data in both Statements I and II together are not sufficient to answer the question
(e) If either of the statements is sufficient to answer the question.

19. How much money did X invest?
    I. An increase in the simple interest from $4\frac{7}{8}\%$ to $5\frac{1}{8}\%$ per annum increases his yearly income by Rs. 25.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

II. The sum invested gets doubled, when invested at 8% annum for $12\frac{1}{2}$ yr.

Direction (20): Each question is followed by two Statements I and II. Indicate your responses based on the following directives.

Give answer

(a) if the question can be answered using Statement I alone but not using Statement II alone.

(b) if the question can be answered using Statement II alone but not using Statement I alone.

(c) if the question can be answered using Statements I and II together but not using either Statement I or II alone

(d) if the question cannot be answered even using Statements I and II together

(e) if the question can be answered using either Statement I alone or Statement II alone

20. The average weight of a class of 100 students is 45 kg. The class consists of two sections I and II, each with 50 students. The average weight W_1 of section I is smaller than the average weight W_2 of section II. If the heaviest student, say Deepak of section II is moved to section I and the lightest student, say Poonam, of section I is moved to section II, then the average weights of the two sections are switched, i.e. the average weight of section I becomes W_2 and that of section II becomes W_1. What is the weight of Poonam?

I. $W_2 - W_1 = 1$

II. Moving Deepak from section II or I (without any move from I to II) makes the average weight of the two section equal.

Adda 247
Govt jobs coaching, now in your Pocket!
Download the Adda 247 App and boost your preparation.
GET IT ON Google Play
Give a missed call on 8099-931-931 to download the App.

ONLINE TEST PROGRAM
to help boost your score in Government Examinations
TIME-BOUND TESTS • DETAILED TEST ANALYSIS
EXPLANATORY SOLUTIONS • ALL INDIA RANKING
STRICTLY BASED ON EXAM PATTERN
Adda 247
Govt. Job in Your Pocket!
COURSES
TEST SERIES
CORRESPONDENCE COURSES
E-LEARNING KIT
CLASSROOM PROGRAM
CART
MY ACCOUNT
ONLINE TEST SERIES
SELECT EXAM
All Courses
SBI (8)
IBPS (25)
Other Bank Exam (18)
SSC (15)
INSURANCE (8)
Bank Special
BANK OF BARODA
10 MOCKS
BOB PO (Scale I) 2017 Online Test Series
₹399
BANK OF BARODA
25 TOTAL TEST
10 MOCKS
15 PRACTICE SET
BOB PO (Scale -I) 2017 Online Test Series with...
₹499
NICL-AO (SCALE-I)
COMBO
20 TOTAL TEST
10 PRE MOCKS
10 MAINS MOCKS
NICL Administrative Officers (Scale I) COMB...
₹599
NICL-AO (SCALE-I)
MAINS
10 MAINS MOCKS
NICL Administrative Officers (Scale I) Mains...
₹399
NICL-AO (SCALE-I)
PRELIMS
10 PRELIMS MOCKS
NICL Administrative Officers (Scale I) Prelims...
₹399
ADD TO CART
For Adda247 ONLINE TEST | Visit: store.adda247.com

Previous Year Memory Based

Direction (1): These questions are based on the information given below.

Choose (A), if the question can be answered by using statement I alone but not by using II alone.

Choose (B), if the question can be answered by using statement II alone but not by using I alone.

Choose (C), if the question can be answered by using any one of the two statements alone.

(D), if the question can be answered by using both the statement together but not by either statement alone.

(E), If the question can not be answered by using both of the statements.

1. Four friends P, Q, R and S got the top four ranks in a competitive examination, but P did not get the first, Q did not get the second, R did not get the third and S did not get the fourth rank. Who secured which rank?
   I. Neither P nor S were among the first 2.
   II. Neither Q nor R was third or fourth.

Direction (2-3): Each of these questions is followed by information in Statements I, II and III. You have to study the questions and statements and decide which of the statements is/are necessary to answer the questions.

2. What is the capacity of the cylindrical tank?
   I. Radius of the base is half of its height.
   II. Area of the base is 616 sq m.
   III. Height of the cylinder is 28 m.
   (a) I and II (b) II and III (c) I and III
   (d) I, II and III (e) Any two of the three
3. What is the two-digit number?
   I. Number obtained by interchanging the digit is more than the original number by 9.

II. Sum of the digits is 7.

III. Difference between the digits is 1.

(a) I and III (b) I and II (c) II and III

(d) II and either I or III (e) Any two of I, II and III

Direction (4): Follow the given instructions. Each item has a question followed by two statements.

(a) if the question can be answered with the help of Statement I alone

(b) if the question can be answered with the help of Statement II alone

(c) if the question can be answered with the help of both the statements but not with the help of either statement itself

(d) if the question cannot be answered even with the help of both the statements.

(e) If the question can be answered by using either of the statements.

4. The average of three quotation for a particular item is 120. Is the highest quotation less than or equal to 139?

I. The lowest quotation is 90.

II. One of the quotations is 125.

Direction (5 – 8): Each examples are followed by two statements I and II giving certain data. Answer each example using the following instructions.

(a) if the question can be answered by using Statement I alone but not by using II alone

(b) if the question can be answered by using Statement II alone but not by using Statement I

(c) if the question can be answered by using either Statement I or II alone

(d) if the question can be answered by using both the statements together but not by either Statement I or II alone

(e) if the question cannot be answered by Statements I and II even taken together

5. X, Y and Z are three consecutive odd numbers (not necessarily in this order). What is the sum of these numbers?

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

I. The difference between Y and Z is 4.

II. One-third of X is 33.

6. If ten men take 6 h to do a piece of work, then how long will 5 boys take to do the same work?

I. A boy works at 3/4 the rate of a man.

II. 5 men and 5 boys take 10 h to do the work.

Direction (7 – 8): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

Give answer

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient

(c) if both Statement I and II together are needed to answer the question

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question

(e) if you cannot get the answer from the Statements I and II together but need even more data

7. What is the three digit number?

I. The three digit number is divisible by 9.

II. The first and third digit is 6.

8. What is the two digit number?

I. The sum of the digits is 6.

II. The digit in the ten's place is double the digit in the unit's place.

Direction (9 – 15): Each question below is followed by two Statements I and II. You have to determine whether the data given in the statements are sufficient for answering the question. You should use the data and your knowledge of Mathematics to choose between the possible answers.

Give answer

(a) if the Statement I alone is sufficient to answer the question but the Statement II alone is not sufficient

(b) if the Statement II alone is sufficient to answer the question but the Statement I alone is not sufficient

(c) if both Statement I and II together are needed to answer the question

(d) if either the Statement I alone or Statement II alone is sufficient to answer the question

(e) if you cannot get the answer from the Statements I and II together but need even more data

9. What is the Jyoti's annual income?
   I. Jyoti's monthly income is Rs. 8500 more than Amit's monthly income.
   II. Rohit's monthly income is Rs. 3.5 thousand which is half Amit's monthly income.

10. What is the rate of interest per cent per annum?
   I. An amount of Rs. 14350 gives a simple interest of Rs. 11480 in 4 yr.
   II. An amount doubles itself in 5 yr. at simple interest.

11. What is the profit earned by selling a watch for Rs. 15675?
   I. The cost price of 5 such watches is equal to selling price of 4 such watches.
   II. 25% profit is earned by selling each watch.

12. What is the salary of B, in a group of A, B, C and D whose average salary is Rs. 62880?
   I. Total of the salaries of A and C is exact multiple of 8.
   II. Average of the salaries of A, C and D is Rs. 61665.

13. The profit earned by a company in 2009 was Rs. 10000. What was the profit earned in 2008?
   I. In 2009, the income was 30% more than in 2008.
   II. The expenditure in 2009 was 10% less than in 2008.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

14. What is the salary of C, in a group of A, B, C, D and E whose average salary is Rs. 48250?
    I. C's salary is 1.5 times B's salary.
    II. Average salary of A and B is Rs. 23500.
15. What is Nikita's share in the profit of Rs. 50000 earned in the business run by her in partnership with Sharmila?
    I. Nikita invested an amount 150% of the amount invested by Sharmila.
    II. The amount invested by Sharmila is two-third of the amount invested by Nikita.

Direction (16): Each of these question is followed by two Statements marked as I and II. Decide whether the data provided in the statements is sufficient to answer the question. Mark answer as

Give answer

(a) if the data in both the statement is required to answer the question.
(b) if the data in statement II alone is sufficient to answer the question, while the data in Statement I alone is not sufficient to answer the question.
(c) if the data in Statement I alone is sufficient to answer the question, while the data in Statement II alone is not sufficient to answer the question.
(d) if the data in both the statements together is not sufficient to answer the question.
(e) If the data in either of the statements is sufficient to answer the question.

16. An upcoming colony near Delhi has two types of villas, deluxe and semi-deluxe. 65% of the villas in the colony are semi-deluxe.
    The number of occupied deluxe villas is twice the number of unoccupied semi-deluxe villas. What per cent of the villas in the colony are occupied?
    I. The number of occupied deluxe villas is six times the number of unoccupied deluxe villas.
    II. The colony has a total of 180 villas.

CAREER POWER AN IIT/IIM ALUMNI COMPANY

Direction (17): Study the following statements and answer the question given below.

17. P, Q and R together start a business with a total investment of Rs. 15000. At the end of the year, the total profit is Rs. 3000. What is P's share in the profit?
    I. P's contributions is 1.5 times Q's.
    II. Q's contribution is twice that of R.
    III. P's contribution is thrice that of R.
    (a) I and II (b) II and III (c) All I, II and III
    (d) Any two of the three (e) None of the above

Direction (18 – 19): Each question is followed by three statements. You have to study the question and all the three statements given and decide whether any information provided in the statements(s) is redundant and can be dispensed with while answering the questions.

18. Rajdhani Express leaves Delhi at 4 pm for Mumbai. At what time will it reach Mumbai?
    I. It maintains the average speed of 110 km/h.
    II. It has four stoppages of 10 min each between Delhi and Mumbai.
    III. It covers 250 km before each stoppage.
    (a) Only II (b) Any two of the three
    (c) Any one of the three (d) All of them are necessary
    (e) Question cannot be answered even with the information in all the three statements.

19. Find the area of an isosceles triangle.
    I. Perimeter of the Triangle is 64 cm.
    II. Base of the triangle is 16 cm.
    III. Height of the triangle is $16\sqrt{2}$ cm.
    (a) Any of them (b) Any two of them (c) Either II or III
    (d) Only I or II (e) None of these

Direction (20): Each of these questions consists of a question and two Statements I and II. Decide whether the data provided in the Statements are sufficient to answer the question.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

Give answer

(a) if the data in Statement I alone is sufficient to answer the question, while the data in Statement II alone is not sufficient to answer the question

(b) if the data in Statement II alone is sufficient to answer the question, while the data in Statement I alone is not sufficient to answer the question.

(c) if the data is both Statements I and II are required to answer the question

(d) if the data in both Statements I and II together are not sufficient to answer the question

(e) if data in either the statements is sufficient to answer the question.

20. What is the number of 360° rotation that bicycle made while rolling 100 m in a straight line without slipping?

I. The diameter of the bicycle wheel, including the tyre, was 0.5 m.

II. The wheel made twenty 360° rotation per min.

Foundation

1. (b); From statement I. we can't conclude the age of P.

From II, Let age of P = 7x

Age of G = 5x

$\frac{7x+7}{5x+7}=\frac{4}{3} \Rightarrow 21x + 21 = 20x + 28$

$x = 7 \Rightarrow$ Age of P = 7 × 7 = 49

$\therefore$ Hence statement II alone is sufficient to answer the question.

2. (e); From statement I, b can be either negative or positive. Also from statement II, b can be either negative or positive, hence we cannot find out the answer.

3. (c); From statement I

p = q + 17 and p = r + 103

from statement II

$P + Q + R = 1703 \Rightarrow 3P = 1823 \Rightarrow P = 607.67$

So, value of p, q and r can be found out by combining both the statement.

Note: figure are faulty as number of votes cannot be fraction but statements yield results.

4. (a); From statement I, $P = \frac{1}{3}(Q + R + S)$

and we know that, P + Q + R + S = 360

Hence, the marks of P can be determined.

Therefore, statement I alone is sufficient.

from statement II, we cannot say anything.

5. (e); Even after combining botht the statements, the volume of container cannot be determined as height of the container is not given. Hence, number of ice cubes that can be accomodated cannot be determined.

6. (c); On combining both the statements we get,

Sujata's father age 5 year before = 3 × (sangeeta's current age)

= 3 × 20 = 60

Sujata's father current age = 60 + 5 = 65

Hence both the statement required to answer the question.

7. (e); From statement I, Mini = Priya + 3

from statement II, Priya : Aishwarya = 3 : 4

Clearly, age of Mini cannot be found by both of the given statement together and need even more data.

8. (a); From statement I

Marks in Biology = 2 × Marks in English

= 2 × 42 = 84

From statement II, we can't find the marks in Biology as we don't know total marks scored by Anand in all the subjects.

Hence, only statement I alone sufficient to answer the question.

9. (e); we can't find the answer as we don't know the capacity of men. In statement I and II, we are given about the capacity of women and children not about men.

10. (e); From statement I, each computer expert may conduct 3 or more programs. Here, we don't know the exact number of programs conducted by each computer expert. So we can't answer the question even with the help of statement II.
11. (c); We can find the value of x and y using both the statements together.
12. (d); Perimeter of square can be known, if either a side or a diagonal is known. Thus, statement I alone or statement II alone is sufficient to answer the question.
13. (e); We can't find the chance of getting a red ball because we don't know the number of red balls.
14. (c); From statement II $\Rightarrow$ length : breadth = 9 : 7 length = 9x and breadth = 7x
    From statement I $\Rightarrow$ $9x \times 7x = 252$
    From this equation, we can find the value of x and then length and breadth and then perimeter.
15. (b); From statement II
    Radius of circle = $\sqrt{144} = 12$
    Required area = $\pi r^2 = \frac{22}{7} \times 12 \times 12$ sq. cm.
16. (b); from statement I $\Rightarrow$ cost of 4 chair = 2 × cost of 3 table
    from statement II $\Rightarrow$ Cost of 2 table = cost of 1 chair = 500 Rs.
    From the equation, we can find the cost of 2 tables and 3 chair and then we can find the required value.
    Hence statement II alone is sufficient to answer the question.
17. (e); As neither the population of town nor the population of women is given, so exact population of women is labour force cannot be calculated.
18. (b); Let the card facing upside = 2x
    Then, card facing down = x
    $\Rightarrow x + 2x = 12 \Rightarrow 3x = 12; \therefore x = 4$
    Hence, statement II alone is sufficient to answer the question.

CAREER POWER
AN IIT/IIM ALUMNI COMPANY

19. (b); From statement I $\Rightarrow$ 3n + 2m = 18
Now, from statement II $\Rightarrow$ n – m = 2n – (4 + m)
n – m = 2n – 4 – m $\Rightarrow$ 2n – n = 4 + m – m
n = 4
So, the value of n can be calculated using statement II alone

20. (c); When taking both statements together
3w = odd number $\Rightarrow$ 2w = Even number
I and II is possible only when W is an integer
So both the statements required to answer the question.

Moderate

1. (b); From statement I, Nothing can be said
From statement II, $\pi(R_1^2 - R_2^2) = \frac{2}{3}\pi R_1^2$
So the ration of $R_1 : R_2$ can be found out
Hence ratio of $C_1 : C_2$ can be found out
Therefore, statement II alone is sufficient.
(Note: Ring always bounded by two concentric circles)

2. (e); According the question $\Rightarrow$ A + B + C + D = 96 yr.
B's present age = ?
From statement I, A + B + D = 20 × 3 = 60 yr.
So, C = 96 – 60 = 36 yr.
From Statement II, C + D = 25 × 2 = 50
D = 50 – 36 = 14 yr.
From data given in both statement together are not sufficient to answer the question.

3. (e); According to the question
Deepak's marks in Hindi
$$= \frac{(\text{Hindi} + \text{Economics} + \text{Sociology} + \text{Philosophy})}{4} + 15$$
Deepak's marks in philosophy = ?

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | Email:ebooks@adda247.com

From statement I, Hindi + Philosophy =112

From statement II, sociology –Economics = 12

So both statements together are not sufficient to determine deepaks marks in philosophy.

4. (c); Let digits of the two digit Number be x and y. Then from statement I

$xy = 72 \Rightarrow x - y = 1 \Rightarrow x = 9$ and $y = 8$

Thus, number will be either 98 or 89.

But from statement II; it is clear that the required number is 89 as unit place is greater than the other.

5. (d); From statement I, we can find the rate of interest as we know SI, time and principal.

Similarly, we can find the rate of interest from statement II also hence either statement I alone or statement II alone is sufficient to answer the question.

6. (c); Speed of boat in still water

$$= \frac{[\text{upstream speed} + \text{downstream speed}]}{2} = \frac{4+6}{2} = \frac{10}{2} = 5 \text{ km/h}$$

7. (e); We can't find the volume of conical vessel even using both the statement together, since we do not have height.

8. (b); From statement II $\Rightarrow$ Vaibhav's age 5 year ago = 21 year

$\therefore$ Vaibhav's present age = 21 + 5 = 26 year

Aishwarya's present age = 26 × 2 = 52 year

Aishwarya's age after 5 year = 52 + 5 = 57 yr.

Hence, statement II alone is sufficient to answer the question.

9. (e); To find the time taken by A, we must have known the value of time taken by B alone but we don't know about C, thus answer can't be found.

10. (d); Using the formula, SI = $\frac{PRT}{100}$

From statement I, P = $\frac{PR \times 5}{100}$ $\Rightarrow$ R = 20%

From statement II $\Rightarrow$ (2240 – 1600) = $\frac{1600 \times R \times 2}{100}$

640 = $\frac{1600 \times 2R}{100}$ $\Rightarrow$ R = 20%

Hence the rate of interest can be found using either statement I alone or statement II alone.

11. (d); Let the common ratio be r.

If the first is the least, then terms are 1, r and r^2. If the last is the least, the terms are $\frac{1}{r^2}$, $\frac{1}{r}$ and 1 using statement I,

$1 + r + r^2 = 21 \Rightarrow r^2 + r - 20 = 0$

$(r + 5)(r - 4) = 0 \Rightarrow r = -5$ or 4

If r = – 5, then the numbers are, 1, –5 and 25, but least among them is –5 $\Rightarrow r \neq -5$

Hence, r = 4 (we may check for the consistency here also)

So, statement I is sufficient

using statement II $(r)(r^2) = 64$

$r^3 = 64 \Rightarrow r = 4$

$\therefore$ Using middle term is 4; So, the statement II is sufficient.

12. (c); From statement I. Let the present ages of Khushi and Suraj be 4x and 7x respectively

Now, from statement I and II

Age of Suraj – Age of Kushi = 15 $\Rightarrow$ 7x – 4x = 15

3x = 15 $\Rightarrow$ x = 5 years

Thus, age of Suraj after eight years = 7 × 5 + 8

= 35 + 8 = 43 years.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

13. (c); Required percentage = 80% of 15% of 50%

$$=\frac{80}{100}\times\frac{15}{100}\times 50\%=6\%$$

Hence, both statements are necessary to answer the question.

14. (b); From I and II, 10 women's work in 1 day

$$=\frac{7}{24}-\frac{1}{6}=\frac{7-4}{24}$$

10 women can finish the work in 8 days.

from II and III

Let 10 men can finish the work in x days and 10 women can finish the same work in y days

Hence from II

$$\frac{1}{x}+\frac{1}{y}=\frac{7}{24} \quad \text{... (i)}$$

and from III, $\frac{3}{x}+\frac{4}{y}=1$ ... (ii)

From equation i × 3 – eq II

$$\frac{1}{y}=\frac{1}{8}\Rightarrow y=8 \text{ days}$$

Again from I and III, $\frac{3}{6}+\frac{4}{y}=1\Rightarrow y = 8$ days.

Hence, any of the two is sufficient to answer the question.

15. (a); From I, Let present age of Sabir be x year and age of his father be 2x year.

From I and II $\frac{x+5}{2x+5}=\frac{6}{11}\Rightarrow 12x + 30 = 11x + 55$

x = 25 year.

Hence, I and II is sufficient to answer the question.

16. (e); Let two digit number be xy (unit digit = y, Ten's digit = x)

we can write it as-(10x + y)

From I, either $x - y = \frac{27}{9} = 3 \Rightarrow y - x = \frac{27}{9} = 3$

From II, $x - y = 3 \Rightarrow y - x = 3$

Adda 247
VIDEO COURSE
by India's Top Faculties
for SSC Exams
SSC Complete Video Course
Maths Video Course
Maths + English Video Course
more than
200
HOURS
of video classes
Call us at: +91 - 90691 42412
visit: elearning.adda247.com
Video Courses are available in Micro SD Card and Android Tablet (SD Card included)

GOVT JOB'S COACHING
NOW IN YOUR HANDS
Adda 247
Govt. Job In Your Pocket
QUIZZES REASONING
DAILY GK QUANT ANALYSIS
JOB ALERTS ENGLISH SESSION
DISC.FORUM THE ANALYZERS
HINDI & ENGLISH GEN. AWARENESS
STUDY ARTICLES LIVE DISCUSSION
CURRENT AFFAIRS CURRENT AFFAIRS QUIZ
LEARNING VIDEOS BANKING SESSIONS
YouTube
Subscribe
Adda 247 CHANNEL
FREE ONLINE COACHING
FROM STAR FACULTIES OF BANKERSADDA

From III, x – y = 3

All the statements are giving same information

Hence, Even by (I) + (II) + (III) we cannot obtain the number.

17. (e); From I, if P = 100, A = 200 and SI = 200 – 100 = 100

Rate $= \frac{SI \times 100}{P \times T} = \frac{100 \times 100}{100 \times 5} = 20\%$

From II Rate $= \frac{400 \times 100}{2000 \times 1} = 20\%$

Hence, either I alone or II + III will be sufficient

18. (e); From I and II, length = 3x = 48 m $\Rightarrow$ x = 16

Breadth = 2x = 32 m

Hence, Area of floor = 48 × 32

cost of flooring = 48 × 32 × 850 = 1305600

Similarly, from II and III, we can find, l = 48m.

and b = 32 m.

and total cost of flooring = Rs. 1305600

Hence, any two of the three statements are sufficient to answer the question.

CAREER POWER™ IIT/IIM ALUMNI COMPANY

19. (b); Using statement I

Let the number of male officers = x

then, number of female officers = $\frac{x}{2} - 250$

Now ratio cannot be exactly calculated

So, statement I is insufficient.

From statement II,

Let the number of male officers = y

Then, number of female officers = $\frac{1}{7}y$

$\therefore$ Required Ratio $= \frac{y}{\frac{y}{7}} = \frac{7}{1} = 7 : 1$

Hence, statement II alone is sufficient to answer the question but not statement I.

20. (c); $x + y = 20$, from statement I

$x = y^2$, in statement II.

put $x = y^2$, in statement I,

$y^2 + y = 20 \Rightarrow y^2 + y - 20 = 0$

$y^2 + 5y - 4y - 20 = 0 \Rightarrow y(y + 5) - 4(y + 5) = 0$

$(y - 4)(y + 5) = 0 \Rightarrow y = 4, -5$

($\therefore$ x and y are positive integer so we cannot take $y = -5$) taking $y = 4$ and putting in statement I

$x + 4 = 20 \Rightarrow x = 16 \Rightarrow$ Now, $x - y = 16 - 4 = 12$

Hence, $x > y$ by 12

$\therefore$ Both the statements are required to answer the question

Difficult

1. (c); Statement I alone is not sufficient to answer, since there is no inormation about y.

Also, statement II is not sufficient.

E.g. Take $x = -1$ and $y = 2$ here, $x < y$ and $\frac{1}{x} < \frac{1}{y}$

But if we take an another example, $x = 1$, $y = 2$

Then $x < y$ and $\frac{1}{x} > \frac{1}{y}$

On combining statement I and II together implies that x and y are both grater than 1 and for two positive number x and y, we know that, if x is less then y, then $\frac{1}{x}$ is greater than $\frac{1}{y}$.

2. (d); From I, AC = 5 cm $\Rightarrow$ b = 5 cm

From II, a + b + c = 4a $\Rightarrow$ b + c = 3a

From III $\angle$ BCA = 60°

From I and II, C = 3a – 5

Using pythagoras theoram

$5^2 = a^2 + (3a - 5)^2 \Rightarrow a = 3$ hence c = 4

$\therefore$ Area of $\Delta ABC = \frac{1}{2} \times a \times c = 6\ cm^2$

Hence, III is redundant

From I and III, $\cos 60° = \frac{BC}{AC}$ and $\text{Sin } 60° = \frac{AB}{AC}$

$\frac{1}{2} = \frac{BC}{5} \Rightarrow BC = \frac{5}{2}$ and $\frac{\sqrt{3}}{2} = \frac{AB}{5} \Rightarrow \frac{5\sqrt{3}}{2} = AB$

Thus area $= \frac{1}{2} BC \times AB$

So, II is redundant an can be dispensed.

3. (a); Statement I is irrelevant

From III, speed $= \frac{200}{10} = 20 m/s = \left(20 \times \frac{18}{5}\right) km$

h = 72 km / h

From II, time taken $\left(\frac{560}{72}\right) h$

Thus, I is redundant

4. (e); Let father's present age be x year and son's present age be y year.

Then, from I, x = 2y

From II, $\frac{x+10}{y+10} = \frac{12}{7}$

From III, (x – 5) – (y – 5) = 4

By using any two of the three equations, the value of x and y can be find out. Thus, any one statement can be dispensed out.

5. (e); Let 1 man's 1 days work = x
and 1 woman's 1 days work = y

Then, $12x + 8y = \frac{1}{10}$

and we are asked 15x + 4 y = ?

From I, 1 man's 1 day work $= \frac{1}{15 \times 12} = \frac{1}{180}$

Thus using Eq. (i) and (ii) we can get the answer.
So, II and III are redundant.

From II, 1 woman's 1 day wrok $= \frac{1}{15 \times 16} = \frac{1}{240}$

Thus, using Eq. (i) and (iii) we get the answer.
So I and III are redundant.

From III $y = \frac{3}{4}x$

Thus, using Eq. (ii) and (iii) we can we get the answer.
So, I and II is redundant

6 (e); Let length of the train P be l m
From I, time taken by train to cross each other = 18s
From II, Relative speed = (x + y) m/s
Where, x = Speed of train P
y = Speed of train Q
From III, length of the train Q = 180 m

Now, $\frac{180 + l}{x + y} = 18$

Thus even with I, II and III answer cannot be obtained.

7. (d); Let P = Principal

R = Rate of interest (%) $r = \left(\frac{R}{100}\right)$

$$\left[P(1+r)^3 - P\right] - 3\,Pr = 76.25$$

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

From statement I, 3 Pr = 1500

Pr = 500

Hence, from Eq. (i) and (ii), we get

$$\left[P(1+r)^3 - P\right] - 3\,pr = 76.25$$

$$\left[P\left(1 + r^3 + 3r(1+r) - P\right)\right] - 3Pr = 76.25$$

$Pr\,(r^2 + 3r) = 76.25$

$$r^2 + 3r = \frac{76.25}{500}$$

One root is +Ve, While the other is – Ve

Hence, r can be found.

This implies, P can be found, statement I is sufficient.

From statement II alone $\Rightarrow r = \frac{5}{100}$

Thus, from eg (i)

$$\left[P(1.05)^3 - P\right] - (3p)\left(\frac{5}{100}\right) = 76.25$$

Hence, P can be found, So, statement II is sufficient.

8. (d); From I Expenditure on food = 25% of his salary, Expenditure on medicine and education = 35% of his salary.

From II, Amount spent on food = Rs. 4000

Expenditure on Entertainment = 15% of his salary and he saves the remaining amount.

Let his salary be Rs. x.

$$\frac{25}{100}x = 4000 \Rightarrow x = \text{Rs. } 16000$$

Thus, using I and II we can find the amount saved. So III is redundant.

From III amount spent on educaton and medicine = Rs. 2500

Thus using I and III we can find the amount saved. So II is redundant.

Hence, II or III are redundant.

9. (a); From I, A = Rs. 11025 at CI, Time = 2 year

From II, A = Rs. 11000 at SI, Time = 2 year

From III, P = 10000 $\Rightarrow$ Since, $A = P\left(1+\frac{R}{100}\right)^n$

Combining I and III, we get the result

Thus II is redundant

Since, SI is $=\frac{P\times R\times T}{100}$ and A = SI + P

Therefore, combining II and III, we can get the result. Thus, I is redundant.

Now, from I and II, we have

$$P\left(1+\frac{R}{100}\right)^2 = 11025$$

$$\frac{P\times R\times 2}{100}+P = 11000 \Rightarrow P\left(1+\frac{2R}{100}\right) = 1000$$

Solving, (I) and (II), We get the value of R.

Thus (III) is Redundant.

Hence, option (a) is correct.

10. (c); Let the present age of Rohan be x year and his father be y year

From I, $x-5=\frac{1}{5}(y-5)$

From II, (x – 2) + (y – 2) = 36

It is abvious that III is irrelevant. Thus it is redundant hence, option (c) is correct.

11. (d); From I

Total investment = Rs. 25000

Time Period = 2 year

From II, Profit $=25000\times\frac{30}{100}$ = Rs. 7500

From III Q's investment = (P + R)'s investment

$\Rightarrow$ Q's investment = 50%

Share of Q will be 50%

Thus, profit earned by Q = Rs. $\frac{7500}{2}$ = Rs. 3750

Thus, all I, II and III are required for the answer.

12. (a); Suppose, total number of cars in september = x

then, $x \times \frac{20}{100} = 60 \Rightarrow x = \frac{60 \times 100}{20} = 300$

$\therefore$ Total number of cars sold in september = 80% of 300 = 240

From both statements

Total Revenue from the sales of cars = 240 × Rs. 4.5 lakh = Rs. 1080 lakh.

13. (d); Let maximum marks of the examination be x.

Then, from statement I,

38% of x + 8 = 42% of x – 12

From this equation, we can find the value of x and than minimum passing marks.

Therefore, statements I alone is sufficient to answer the question

Now, from statement II,

35% of x + 25 = 40% x

From this equation, we can find the value of x and then minimum passing marks.

Using 35% of x + 23

Therefore, statement II alone is sufficient to answer the question

From statement III, we can't find the answer.

14. (d); Let the length and breadth of the rectangle be L and B respectively

Then from statement II,

$\tan 60° = \frac{L}{B} \Rightarrow L = \sqrt{3}\,B$

From statement I, 2(L + B) = 60

L + B = 30

Using Egs (i) and (ii) we can find the value of L and B and then the area. After that, with the help of statement III, we can find the required cost. Hence, all the given statement are necessary to answer the question.

15. (b); Using any two of the given statement, we can get the number of days required to complete the work by A and B, sepanately and than we can find required number of days to complete the work working together.

16. (e); From statement I, $SI = \frac{P \times R \times T}{100}$

$\Rightarrow P = \frac{P \times R \times T}{100} = \frac{100}{T} = \frac{100}{10} = 10\%$

From statement II, For 2 year, $CI - SI = \frac{PR^2}{100^2}$

$150 = \frac{15000 \times R^2}{10000} \Rightarrow R^2 = 100 \Rightarrow R = 10\%$

We can't find the value of R using statement III

Hence, either I on II alone is sufficient to answer the question.

17. (c); Let the numbers are in ascending order be A, B, C and D.

Then, from the statement I, D – C < C – B

B + D < 2 C

From statement II, D – C > B – A $\Rightarrow$ A + D > B + C

A + D + A + D > A + D + B + C

2 (A + D) > A + B + C + D

$\frac{A + D}{2} > \frac{A + B + C + D}{4}$

Thus Average of the largest and the smallest of for given number greater than the average of the four numbers.

Adda247 | No. 1 APP for Banking & SSC Preparation
Website:store.adda247.com | **Email:**ebooks@adda247.com

From statement III, D – B > C – A $\Rightarrow$ D + A > C + B

Which given the same result as in statement II. Thus, with the help of either II or III, we can give the answer. Hence I and either II or III are redundant.

18. (e); Let the income of mr. X be Rs. x

then, from statement I and II.

15% of x = 4500 $\Rightarrow x = 4500 \times \frac{100}{15}$ = 30000 Rs.

From I and III, $\frac{4}{5}$ of 85% of x = 20400

$\Rightarrow x = \frac{20400 \times 5 \times 100}{4 \times 85}$ = 30000 Rs.

From statements II and III

$\frac{4}{5}$th of the expenditure = 20400

$\Rightarrow$ Expenditure $= 20400 \times \frac{5}{4}$ = Rs. 25500 and saving = Rs. 4500

Hence monthly income = Expenditure + savings

= 25500 + 4500 = Rs. 30000

Thus, answer can be found out by any two of the given Statement and hence any one of the statements can be dispensed with.

19. (a); From statement I, Increase in rate of interest

$= 5\frac{1}{8} - 4\frac{7}{8} = \frac{41}{8} - \frac{39}{8} = \frac{2}{8} = \frac{1}{4}$

Increased income = Rs. 25

Now, let money invested be Rs. x.

Then, 25 = $x \times \frac{1}{4} \times \frac{1}{100} \Rightarrow x =$ Rs.10000

From statement II, Here, SI = Rs. x, t $= 12\frac{1}{2} = \frac{25}{2}$,

P = Rs. x, r = 8%

We cannot find x.

20. (c); From statement I, $W_{II} = 45.5$ and $W_{I} = 44.5$

Than, total weight of section II = 45.5 × 50 = 2275 kg

Total weight of section I = 44.5 × 50 = 2225 kg

If weight of Deepak be x, then from

statement II, $\frac{2275-x}{49} = \frac{2225+x}{51}$

116025 – 51x = 109025 + 40x $\Rightarrow$ 7000 = 100x

$\therefore$ x = 70 kg.

Now, we can easily find the weight of Poonam as we found the weight of Deepak. Thus both the statements are necessary to find the weight of Poonam

Note $\rightarrow$ If you are confused that weight of poonam can be found out or not, Then look at the following.

Let weight of poonam be y kg. Then according to the given information.

$$\frac{2275-70+y}{50} = \frac{2225+70-y}{50}$$

Previous Year Memory Based

1. (c); Using A $\rightarrow \begin{bmatrix} Q \rightarrow 1 \\ R \rightarrow 2 \\ S \rightarrow 3 \\ P \rightarrow 4 \end{bmatrix}$: we get solution

Using B $\rightarrow \begin{bmatrix} Q \rightarrow 1 \\ R \rightarrow 2 \\ P \rightarrow 4 \\ S \rightarrow 3 \end{bmatrix}$: we get solution

Thus we get the solution either A or B

2. (e); From statements I and III

$h = 28m$, then $r = \frac{28}{2} = 14m$

$\pi r^2 h = \frac{22}{7} \times 14 \times 14 \times 28$

$= 22 \times 28 \times 28$

From statements II and III

Area $= \pi r^2 = 616$ sqm, $h = 28m$

$\because$ Capacity = Area × h $= \pi r^2 h$

$= (616 \times 28)\ m^3$

From statements I and II,

Capacity $= \left[616 \times 2 \times \sqrt{\frac{616}{\pi}}\right] m^3$

So, capacity of cylindrical tank can be found by using any two of the three statements.

3. (d); Let the number = 10y + x

From statement I,

$(10x + y) - (10y + x) = 9$

$x - y = 1$

From statement II, $x + y = 7$

From statement III, $x - y = 1$

So, II and either I on III is necessary.

4. (c); $\because$ Average money = 120 Rs.

$\therefore$ The sum of all three quotation = 360 Rs.

(According to the statement I)

$\therefore$ Sum of remaining two = Rs. (360 – 90) = Rs. 270

If one of them is rs. 125 according to the statements II

So, both statements are necessary to given, the answer.

5. (d); From II, $\frac{1}{3}$ of $x = 33 \Rightarrow x = 99$

From Statement I, Y and Z are first and third number (or third and first numbers), respectively as their difference is 4. So, these two numbers are 99 – 2 and 99 + 2, Hence, we can find the sum of these number by using both the statements together

6. (c); From statement I

I boy = $\frac{3}{4}$ man $\Rightarrow$ 5 boys $= \frac{3}{4} \times 5$ man $= \frac{15}{4}$ man

10 man take 6 h to do the work. So, 5 boys which is equal to $\frac{15}{4}$ man can take $\frac{10 \times 6 \times 4}{15}$ days to do work.

$\therefore$ Statement I alone is sufficent

From statement II

10 men can complete the work in 6 h. So, 5 man can complete the work in 60 h.

Hence, statement II alone is sufficent.

7. (c); From statement II, Number = 6, x, 6

But from statement I, it must be divisible by 9.

$\therefore$ x = 6 (using divisbility rule of 9)

8. (c); From statement II

Let digit at units place = x

Then, digit at ten's place = 2 x

From statement I, x + 2x = 6 $\Rightarrow$ 3x = 6 $\Rightarrow$ x = 2

Hence, we can find the number using both the statements together.

9. (c); From statement II, Rohit's monthly income

= Rs. 3.5 thousand = Rs. 3500

Amit's monthly income = 2 × 3500 = 7000 Rs.

From statement I, Jyoti's monthly in come

= Rs. (7000 + 8500) (using statement II) = 15500 Rs.

Thus, both the statements together are sufficient to answer the question

10. (d); From statement I, SI = $\frac{P \times R \times T}{100}$

$11480 = \frac{14350 \times R \times 4}{100} \Rightarrow R = 20\%$

From statement II, $P = \frac{P \times R \times 5}{100} \Rightarrow R = 20\%$

Thus, statement I alone or statement II alone is enough to answer the question.

11. (d); Using statement I

Profit percent $= \left(\frac{5-4}{4} \times 100\right)\% = 25\%$

$\therefore$ 125% of cp = 15675

$\Rightarrow$ CP $= \frac{15675 \times 100}{125} = 12540$

$\therefore$ Profit = SP – CP

= 15675 – 12540 = Rs. 3135

Similarly, we can find the profit using statement II.

So, either statement I or statement II is sufficeint to answer

12. (b); Total salary of A, B, C and D = 4 × 62880 = Rs. 251520

From statement II, we can find the total salary of A, C, and D and subtracting if from above value, we can get the salary of B. Also, nothing can be said about the salary of B, using statement I alone.

13. (e); Since, we don't know the income and expenditure of the company in 2009, therefore we can't find the income and expenditure of the company in 2008 even by using the given statement and thus we can't find the profit of the company in 2008.

14. (e); From statement I, C = 1.5 B

From statement II

A + B = 2 × 23500 = 47000 Rs.

Thus, we can't find the salary of c even using both the statements together.

15. (d); From statement I, Ratio of investment of Nikita and Sharmila = 150% : 100% = 3 : 2

From statement II, Ratio of investment of Nikita and Sharmila

$= 1 : \frac{2}{3} = 3 : 2$

$\therefore$ Nikita's share $= \frac{3}{5} \times 50000 =$ Rs. 30000

Thus either statement I alone or statement II alone is sufficient to answer the question.

16. (a); Total villas = 180

Semi - deluxe $= 180 \times \frac{65}{100} = 117$

Deluxe villas = 180 – 117 = 63

Ratio between occupied deluxe villas and unoccupied deluxe villas = 6 : 1

$\therefore$ Occupied deluxe villas $= \frac{6}{(6+1)} \times 63$

$= \frac{6}{7} \times 63 = 54$

Unoccupied Semi-deluxe villas $= \frac{1}{2} \times 54 = 27$

So, occupied semi-deluxe villas = 117 – 27 = 90

Hence, required percent of occupied villas in colony

$= \left(\frac{54+90}{180} \times 100\right)\% = \left(\frac{144}{180} \times 100\right) = 80\%$

17. (d); Let R's contribution be Rs. x.

From I and II

R = x Rs. Q = 2x Rs.

P = $\left(\frac{3}{2} \times 2x\right) = 3x$ Rs.

From I and II, R = x Rs., Q = 2 x Rs. and P = 3 x Rs.
From I and III, R = x Rs., P = 3 x Rs.

$$Q = \left(\frac{2}{3} \times 3x\right) = 2x \text{ Rs.}$$

Thus, P : Q : R = 3x : 2x : x = 3 : 2 : 1

$$P' \text{ share} = \left(3000 \times \frac{3}{6}\right) = 1500 \text{ Rs.}$$

Hence, any two of the three statements are sufficient to answer the question.

18. (d); From statement II and III
Let form stoppages be A, B, C and D
∴ Distance covered from Delhi to stoppage mumbai = 250 × 4 = 1250 km
Now, with the help of I we con find the required time

19. (d); $\text{Area of triangle} = \frac{1}{2} \times \text{Base} \times \text{Height}$
Which can be given by using the statement II and III, Hence statement I can be dispensed with we can find the area using I and II

20. (a); From statement I, Circumference of wheel

$$= 2\pi r = \frac{2 \times 22}{7} \times \frac{0.5}{2} = \frac{22}{7} \times 0.5\text{m}$$

∴ Total rotation made to travel 100 m.

$$= \frac{100}{\frac{22}{7} \times 0.5} = \frac{7 \times 1000}{22 \times 5} = 63.6$$

CAREER POWER AN IIT/IIM ALUMNI COMPANY A unit of Adda 247 | bankersadda.com A Unit of Adda247 | Adda 247 Govt. Job in Your Pocket! | sscadda.com A Unit of Adda247

Fulfill your Dream of Government Job visit: careerpower.in

Adda 247
Publications

Ace QUANT

A Complete Guide on Quantitative Aptitude
for Banking & Insurance Examinations

Useful for SBI, IBPS, RBI,
NABARD and Other Exams

SECOND EDITION 2018

2. PERCENTAGE

eBook

bankersadda.com
A Unit of Adda247

sscadda.com
A Unit of Adda247

Chapter 2	Percentage

1. A is 50% more than B, C is 2/3 rd of A and D is 60% more than C. Now if each of A, B, C and D is increased by 10%. Then find D is what percent of B after the increase.
   (a) 150% (b) 160% (c) 175%
   (d) 180% (e) 170%
2. Annually income of Arun is 6.24 lakh, he spend $38\frac{6}{13}$% of monthly income on Food and Rent, $12\frac{1}{2}$% of remaining on Gym, $14\frac{2}{7}$% of remaining on clothing and 75% of remaining invested in mutual fund. if he kept remaining amount after all expense as cash with him then find how much cash Arun have after one year?
   (a) 72000 Rs. (b) 74000 Rs. (c) 75000 Rs.
   (d) 78000 Rs. (e) 80000 Rs.
3. Mr. Shah's monthly income is Rs 54,550. In an entire year, he spends 32% of his annual salary on groceries, 12% on equipment repairs, 10% on servant, and the half of remaining amount is invested in fixed deposit, what is the amount invested by him in fixed deposit?
   (a) Rs 1,50,558 (b) Rs 1,55,240 (c) Rs 1,52,610
   (d) Rs 1,58,789 (e) Rs 1,54,336
4. Bhavya spend 25% of his monthly salary on rent, 20% of remaining on food, $16\frac{2}{3}$% of remaining on clothes and 50% of the remaining on mutual funds. He gave 10% of his salary to his friend. If Bhavya monthly salary is 20,000 then find his savings.
   (a) 2000 (b) 3000 (c) 5000
   (d) 4000 (e) 1500

5. A mixture of milk and water contains 80% milk. x litre of mixture is taken out and replaced with water. Find the value of x if final concentration of milk in mixture is 50% and initial quantity of mixture is 80 ℓ.
(a) 35ℓ (b) 40ℓ (c) 30 ℓ
(d) 18ℓ (e) 24 ℓ

6. Manu invested 13% of his monthly salary in the FD and 12% in PPF. 3/25th of the remaining amount spent on clothing. 3/11th remaining amount spent on food. 5/12th of remaining spent of education. Half of remaining amount is invested in a scheme which offer 10% SI from which after 5 year he get 16800 amounts. Find the amount invested in FD and PPF together?
(a) 25000 (b) 20,000 (c) 18,000
(d) 21,000 (e) None of these

7. A shopkeeper has 12 kg of pure rice and 4 kg of impure rice. He mixes both type of rice but 4 kg of the mixture gets spoiled. If he again mixes 4 kg of impure rice to the remaining mixture and professes to sell rice at a profit of 20% on cost of pure rice. Then what is actual profit or loss percentage if cost of impure rice is 40% of cost of pure rice.
(a) $\frac{400}{19}$% (b) $\frac{250}{21}$% (c) $\frac{250}{19}$%
(d) $\frac{250}{17}$% (e) $\frac{500}{19}$%

8. Annually income of Sameer is 8.4 lakh Rs. he spend 14 $\frac{2}{7}$% on Rent, 16 $\frac{2}{3}$% of remaining on Food and $\frac{11}{20}$ of remaining spend on Cloth and travel together monthly. then find the difference between total saving and amount spend on travel annually, if given ratio between amount spend on Cloth to travel is 17 : 8 ?
(a) 164400 Rs. (b) 165400 Rs. (c) 160400 Rs.
(d) 175400 Rs. (e) 150400 Rs.

Content Partner Adda 247

9. Aman started a shoes manufacturing company, manufacturing cost of each shoes is Rs. 500, Raw material cost is Rs 300 and transport cost of Rs 100 If company manufactured 150 Shoes in first order and sold 50% of shoes on half of its cost price. , then find on how much percent above of cost price should be remaining shoes sold to gets 50% profit on total cost?
(a) 100% (b) 150% (c) 75%
(d) 125% (e) 120%

10. In a party Sameer mixed two type of liquid in a glass, type A liquid contains 35% of Rum and type B liquid contains 40% of Rum. Sameer takes 6 ml from type A liquid and 4ml from type B liquid, then find percentage of Rum in the glass?
(a) 27% (b) 37% (c) 35%
(d) 32% (e) 31%

11. Bankersadda started its publication with the 1500 DI books. Printing cost per book is 125 Rs, packing cost per book is 15 Rs and shipping cost per book is 40 Rs. if 50% of books sold on half of total cost price, then find on how much percent above should be remaining book sold to gets 20% profit on total outlay?
(a) 50% (b)60% (c) 80%
(d) 90% (e)70%

12. Adda247 publication sold a puzzle book in Rs. 475 and made profit of 25% on CP and sold a DI book in Rs. 575 and made a profit of 15% on CP. If publication sold puzzle book in Rs. 360, then find what price should DI book will be sold to made a profit of 30% on both the books?
(a) Rs.784 (b) Rs.874 (c) Rs.847
(d) Rs.748 (e) Rs.478

13. A shopkeeper has 2 types of Rice. Type 1 of Rice is 20% costlier than type 2. He mixed these two types of Rice in some ratio and mark the price of mixture 10% above the cost price

of type 2. On selling the whole mixture he earns a profit of $\frac{100}{43}$% .Find out the ratio in which type 1 and type 2 Rice are mixed?

(a) 3 : 5 (b) 2 : 5 (c) 5 : 7
(d) 3 : 4 (e) 5 : 3

14. Abhishek got 432 marks in a test which were 112 more than that of Arun marks, If Sonakshi got 60% marks out of total mark of the test which were 64 mark more than the Arun marks. What percent of marks did Arun got ?

(a) 65% (b) 60% (c) 45%
(d) 50% (e) 55%

15. A, B, C and D purchased a restaurant for Rs. 56 lakhs. The contribution of B, C and D together is 460% of A alone, The contribution of A, C and D together is 366.66% that of B's contribution and the contribution of C is 40% that of A, B and D together. The amount contributed by D is

(a) 10 lakhs (b) 12 lakhs (c) 16 lakhs
(d) 18 lakhs (e) None of these

1. (b); Let B = 100

$\therefore$ A = 150

$C = \frac{2}{3} \times 150 = 100$

D = 160

If we increase all values by 10% then there is no change in relative percentages values.

$\therefore Percentage\ required = \frac{160}{100} \times 100 = 160\%$

2. (a); Monthly income of Arun

$= \frac{6.24}{12} = 52000$

Expense on Food and Rent

$= 52000 \times \frac{500}{13} \times \frac{1}{100} = 20000$

Expense on gym

$= (52000 - 20000) \times \frac{12.5}{100} = 4000$

Expense on Clothing

$= (32000 - 4000) \times \frac{1}{7} = 4000$

Invested in mutual fund

$= 24000 \times \frac{3}{4} = 18000$

Cash after one year

$= (24000 - 18000) \times 12 = 72000$ Rs.

3. (a); Annual income = 54550 × 12 = Rs 6,54, 600

Annual expenditure on groceries, repairs and servant = (32% + 12% + 10%) of Rs 6,54,600

= 54% of Rs 6,54,600

Remaining part of annual income = 46% of Rs 6,54,600

Now, half of this remaining amount is invested in fixed deposit.

Therefore, annual investment in fixed deposit

= 23% of Rs 6,54,600 = Rs 1,50,558

4. **(b);** Total salary = 20000

Rent = 5000

$Food = 15000 \times \frac{20}{100} = 3000$

$Clothes = \frac{12000}{100} \times \frac{50}{3} = 2000$

$Mutual\ fund = \frac{10000}{100} \times 50 = 5000$

$To\ his\ friend = \frac{20000 \times 10}{100} = 2000$

Saving → 5000 – 2000 = 3000

5. **(c);** According to question

$\frac{4}{5} \times 80 - \frac{4}{5}x = \frac{1}{5} \times 80 - \frac{1}{5}x + x$

$64 - \frac{4}{5}x = 16 - \frac{1}{5}x + x$

$48 = \frac{4}{5}x - \frac{1}{5}x + x$

$48 = \frac{3x}{5} + x$

$x = 30\ell$

Or

$\frac{4}{5} \times 80 - \frac{4}{5}$

$= 40\ (because\ final\ concentration\ is\ 50\%)$

$x = 30\ell$

6. **(b);** Let total salary → 100

13% in FD

12% in PPF

Remaining =75

In clothes → $\frac{75 \times 3}{25}$ → 9

In food = $66 \times \frac{3}{11}$ → 18

In education → $48 \times \frac{5}{12}$ → 20

Remaining → 48 – 20 → 28

Half in scheme → 14

Amount $\rightarrow 14 + \frac{14\times10\times5}{100} = 16800$

$1 \rightarrow 800$

$100 \rightarrow 80000$

Amount in FD and PPF $\rightarrow$ 20,000

7. (e); Let cost of pure rice per kg is 10 Rs.

So cost of impure rice per kg is 4 Rs.

Total cost for the shopkeeper

$= 12 \times 10 + (4 + 4) \times 4$

$= 120 + 32 \Rightarrow = 152$ Rs.

$Total\ selling\ price$

$= Total\ quantity\ sold\ \times \frac{120}{100} \times 10$

$= (12 + 4 - 4 + 4) \times \frac{120}{100} \times 10 = 16 \times 12 = 192$

$Required\ percentage = \frac{192 - 152}{152} \times 100 = \frac{500}{19}\%$

8. (a); Monthly income of Sameer

$= \frac{8.4}{12} lakh = 70000\ Rs.$

$Spend\ on\ Rent = 70000 \times \frac{1}{7} = 10000$

$Spend\ on\ Food = (70000 - 10000) \times \frac{1}{6} = 10000$

Spend on (Coth + travel)

$= (70000 - 20000) \times \frac{11}{20} = 27500$ Rs.

Saving = 22500 Rs.

$Expend\ on\ travel = 27500 \times \frac{8}{25} = 8800$

Required difference = (22500 × 12 – 8800 × 12) Rs.

= (270000 – 105600) Rs. = 164400 Rs.

9. (b); Total CP of one shoes = (500 + 300 + 100) = 900

CP of 150 shoes = 900 × 150

CP of 75 shoes = $\frac{900\times75}{2}$

Let's required percentage =x

$\therefore \frac{900 \times 75}{2} + \left(\frac{100 + x}{100}\right) \times (900 \times 75)$

$= \frac{150}{100} \times 900 \times 150$

$= 33750 + 67500 + 675x = 202500$

$= 675x = 202500 - 101250$

$675x = 101250$

$x = \frac{101250}{675}$

$x = 150\%$

10. (b); Let's total quantity of glass = 10 ml

So, ram from type A liqure = 6ml $\times \frac{35}{100}$ = 2.1 ml

Ram from type B liqure = 4ml $\times \frac{40}{100}$ = 1.6 ml

Total Rum = (2.1 + 1.6) ml = 3.7 ml

Required % = $\frac{3.7 \text{ ml}}{10} \times 100 = 37\%$

11. (d); Total CP of one DI book = 125 + 15 + 40 = 180 Rs.

C.P. of 1500 books = 1500 × 180

$SP\ of\ 750\ book = \frac{750 \times 180}{2}$

Let required percent = x%

$\therefore \frac{750 \times 180}{2} + \left(\frac{100 + x}{100}\right) \times (750 \times 180)$

$= \frac{120}{100} \times 180 \times 1500$

$67500 + 135000 + 1350x = 324000$

$1350x = 324000 - 202500$

$x = \frac{121500}{1350} = 90\%$

12. (a); $CP\ of\ puzzle\ book = \frac{475}{125} \times 100 = 380\ Rs.$

$CP\ of\ DI\ book = \frac{575}{115} \times 100 = 500\ Rs.$

For 30% profit on both

$= (380 + 500) \times \frac{130}{100} = 1144$

DI book should be sold
= 1144 – 360 = 784 Rs.

13. (a); Let x kg is quantity of type 1 Rice
y kg is quantity of type 2 Rice
Let cost of type 2 Rice = 5a per kg
So cost of type 1 Rice = 6a per kg
Now cost price of mixture = 6ax + 5ay
Selling price of mixture = 5.5a per kg
= 5.5ax + 5.5ay
$Profit = \frac{0.5ay - 0.5ax}{5ay + 6ax} \times 100 = \frac{100}{43}$
x : y = 3 : 5

14. (d); Arun Mark = 432 – 112 = 320
Lets total Mark = x
ATQ
Sonakshi = $\frac{60x}{100}$ = (320 + 64)
x = $\frac{384 \times 100}{60}$ = 640
Required % = $\frac{320}{640} \times 100 = 50\%$

15. (d); We can conclude
A : (B + C + D) = 100 : 460 = 10 : 46
⇒ A's contribution = 10 lakhs
&B : (A+C+D) = 100 : 366.66
= 3 : 11 = 12 : 44
⇒ $B's\ contribution = 12\ lakh$
& C : (A + B + D) = 40 : 100
= 2 : 5 = 16 : 40
⇒ $C's$ Contribution = 16 lakh
Hence, the contribution of D
= 56 – (10 + 12 + 16) = 18 lakhs

Adda 247
Publications

Ace QUANT

A Complete Guide on Quantitative Aptitude
for Banking & Insurance Examinations

Useful for SBI, IBPS, RBI,
NABARD and Other Exams

SECOND EDITION 2018

1. RATIO PROPORTION AND PARTNERSHIP & MIXTURE AND ALLIGATION

eBook

bankersadda.com
A Unit of Adda247

sscadda.com
A Unit of Adda247

Chapter 1	Ratio Proportion and Partnership & Mixture and Alligation

Directions (1-2): Three friends P, Q and R share an apartment and share the rent equally. The monthly income of R is 25% less than that of Q and Rs.8000 less than that of P. Monthly expenditure of Q on food is Rs.1000 more than that of P and is Rs.1000 less than that of R. After meeting the expenses on rent and food, they save amounts in the ratio 6 : 7 : 4.

1. If Q saves $62\frac{1}{2}$% of his total monthly income, then how much percent does R save out of his monthly income? (2 Marks)
   (a) $47\frac{13}{21}$% (b) $48\frac{12}{21}$% (c) $45\frac{5}{21}$%
   (d) $49\frac{11}{21}$% (e) Cannot be determined
2. If the total amount spent by all the three on food is Rs.27000 and the monthly income of Q is Rs.6000 more than that of P, then what is the monthly rent of the apartment?
   (a) Rs.48000 (b) Rs.30000 (c) Rs.24000
   (d) Rs.36000 (e) Cannot be determined

Directions (3-4): A, B and C invested Rs.400, Rs.900 and Rs.500 respectively at the beginning of a year respectively in a business venture.

At the end of the first quarter they invested additional amount in the ratio of 5 : 9 : 4.

Then at end of the second quarter A, B and C invested additional amount in the ratio of 5 : 4 : 10.

Again at the end of the third quarter they invested additional amount in the ratio of 1 : 1 : 2.

They invested the whole amount for one year and the profit earned in the business is proportional to the investment and the period of investment.

3. If they had invested additional amount at the end of each quarter in the same ratio as they had invested at the end of the first quarter then what will be profit of B at the end of the year if the total profit at the end of the year is will be Rs.17500. (1 Mark)
   (a) Rs.7500 (b) Rs.8750 (c) Rs.12500
   (d) Rs.10000 (e) Cannot be determined
4. Additional amount invested by B at the end of first quarter is Rs.500 more than additional amount invested by C at the end of first quarter and average of additional investment made by all the three at the end of third quarter is Rs.1200. If the investments made by A at the end of the first and second quarters are equal then what will be the ratio of profit sharing of A, B and C at the end of the year?
   (a) 7 : 8 : 5 (b) 5 : 7 : 8 (c) 5 : 8 : 7
   (d) 7 : 5 : 8 (e) None of these

Directions (5-6): A, B and C invested in the ratio 4 : 6 : 9 respectively in a business venture at the start of a year. At the end of four months, they invested an additional amount in the ratio of 2 : 3 : 1. Then at the end of eight months, they again invested an additional amount in the ratio of 3 : 2 : 5. They invested the whole amount for one year and the profit earned in the business is proportional to the investment and the period of investment.

5. If investments made by A at the start of the year, at the end of four months and at the end of eight months are in the ratio 8 : 6 : 9, then find the profit of C at the end of the year if the total profit at the end of the year is Rs.150000.
   (a) Rs.50000 (b) Rs.75000 (c) Rs.37500
   (d) Rs.62500 (e) None of these
6. If the sum of the total amount invested by A and B in the year is Rs.50000, that of B and C is Rs.63000 and that of C and A is Rs.59000; then find the total amount invested by all of them at the start of the year?

Content Partner Adda 247

(a) Rs.30000 (b) Rs.38000 (c) Rs.18000
(d) Rs.40000 (e) Cannot be determined

7. A sum is divided between A and B in the ratio of 1 : 2. A purchased a car from his part, which depreciates $14\frac{2}{7}\%$ per annum and B deposited his amount in a bank, which pays him 20% interest per annum compounded annually. By what percentage will the total sum of money increase after two years due to this investment pattern (approximately)?
(a) 10% (b) 20% (c) 24%
(d) 16% (e) 13%

8. Akhilesh took five papers in an examination, where each paper was of 200 marks. His marks in these' papers were in the proportion of 7 : 8 : 9 : 10 : 11. In all papers together, the candidate obtained 60% of the total marks. Then, the number of papers in which he got more than 50% marks is :
(a) 1 (b) 3 (c) 4
(d) 5 (e) None of these

9. A mixture contains wine and water in the ratio of 3 : 2 and another mixture contains them in the ratio of 4 : 5. How many litres of the latter must be mixed with 3 litres of the former so that the resultant mixture may contain equal quantities of wine and water ?
(a) 4 litres (b) $\frac{2}{5}$ litres (c) $3\frac{3}{4}$ litres
(d) $4\frac{1}{2}$ litres (e) $5\frac{2}{5}$ litres

10. If ratio of investment A, B and C are in the ratio 3 : 5 : 8 and the time of investment of A, B and C are $\frac{100}{3}\%$, 80% and 25% respectively of their investment, and profit of A is 4800 then what will be the profit of C.
(a) 25,600 (b) 15,600 (c) 24,800
(d) 22,500 (e) 26,700

Content Partner Adda 247

11. A sum of money is divided among Wasim, Chintan, Yash and Zignesh in the ratio of 3 : 7 : 9 : 13, respectively. If the share of Wasim and Yash together is Rs. 11172, then what is the difference between the amounts of Chintan and Zignesh?
(a) Rs. 7672 (b) Rs. 6834 (c) Rs. 5586
(d) Rs. 7867 (e) Rs. 5676

12. A, B and C invested in a business in the ratio 6 : 8 : 9. If B invested for a period whose numerical value is 112.5% of B's investment but A and C invested for one year. If profit of B at the end of year is 16750 then what is the share of profit of C.
(a) 20225 (b) 22125 (c) 25225
(d) 25125 (e) 23125

13. A and B started a business in partnership with the investment of Rs. 27000 and Rs. 36000 respectively, after 4 month A withdraw 5000 Rs. and B added 6000 Rs. more and C joined with 35000 Rs. if after one year they gets a total profit of Rs. 130500, then find the profit share of C ?
(a) 36000 Rs. (b) 32000 Rs. (c) 35000 Rs.
(d) 38000 Rs. (e) 42000 Rs.

14. Two container P and Q have mixture. In P three liquid A, B and C is mixed in a ratio of 2 : 1 : 1 and in Q two liquid B and C is mixed in ratio of 3 : 2. Mixture of both container P and Q poured into third container X which show the quantity ratio of A, B and C is 8 : 13 : 10. Find the quantity in Q is what % less or more than the quantity in P.
(a) 3.25% (b) 12.5% (c) 6.25%
(d) 11% (e) 25%

15. Ankit gets 6000 Rs. out of total profit of 9000 Rs. and he invested 8000 more amount than his partner for 8 months and his partner Arun invested his amount for whole the year in partnership, then find how much amount invested by Ankit?

Content Partner Adda 247

(a) 8000 Rs. (b) 1000 Rs. (c) 9000 Rs.
(d) 14000 Rs. (e) 12000 Rs.

16. Two gallon of a mixture of water and sprit, water contain 15% of mixture. They are added to 3 gallon of another mixture of water and sprit,in which water contain 8% of mixture and half of a gallon water when added to the whole mixture find the water percentage in resulting mixture ?
(a) $17\frac{10}{11}\%$ (b) $18\frac{10}{11}\%$ (c) $16\frac{10}{11}\%$
(d) $19\frac{10}{11}\%$ (e) $20\frac{10}{11}\%$

17. A, B and C started a business with their investment in the ratio 1 : 2 : 4. After 6 months, A invested half amount more as before while C withdrew $\frac{1}{4}$ th of his investment. Find the ratio of their profits at the end of the year.
(a) 5 : 12 : 13 (b) 5 : 11 : 14 (c) 5 : 12 : 14
(d) 5 : 12 : 10 (e) None of these

18. Ramesh, Rajan and Ritesh enter into partnership by making investments in the ratio 3 : 5 : 7. After a year, Ritesh invests another Rs. 337600 while Ramesh withdraws Rs. 45600. The ratio of investments then changes to 24 : 59 : 167. How much did Ramesh invest initially?
(a) Rs. 45600 (b) Rs. 96000 (c) Rs. 141600
(d) Rs. 156000 (e) None of these

19. In two alloys, copper and zinc are present in the ratios of 5:2 and 2:3. 14 kg of 1st alloy, 10 kg of 2nd alloy and some of pure copper are melted togther. An alloy was obtained in which the ratio of copper to zinc was 2:1. Find the weight of the pure copper melted?
(a) 4 kg (b) 5 kg (c) 6 kg
(d) 10 kg (e) None of these

20. A and B started a business in partnership with the investment of Rs. 27000 and Rs. 36000 respectively, after 4 month A withdraw 5000 Rs. and B added 6000 Rs. more

and C joined with 35000 Rs. if after one year they get a total profit of Rs. 130500, then find the profit share of C?

(a) Rs. 36000 (b) Rs. 32000 (c) Rs. 35000
(d) Rs. 38000 (e) Rs. 42000

21. Some quantity of Wheat costing 25 Rs./kg is mixed with some quantity of wheat costing 30 Rs./kg. If final mixture costs Rs. 28/kg then find the ratio of quantity in which they are mixed.

(a) 2 : 3 (b) 3 : 5 (c) 3 : 2
(d) 5 : 3 (e) 2 : 5

22. From a mixture of 100 litre of milk and water which contain 70% milk and 30% water some amount is taken out and replaced with water. The resultant mixture contains equal amount of milk and water. Find the amount of mixture taken out and replaced with water.

(a) $\frac{100}{7}$ litre (b) $\frac{200}{7}$ litre (c) $\frac{50}{7}$ litre
(d) $\frac{150}{7}$ litre (e) 25 litre

23. If ratio of investment of A, B and C are in the ratio 3 : 5 : 8 and the time of investment of A, B and C are $\frac{100}{3}$%, 80% and 25% respectively of their investment, and profit of A is 4800 then what will be the profit of C. (in Rs.)

(a) 25,600 (b) 15,600 (c) 24,800
(d) 22,500 (e) 26,700

24. A milkman pays Rs. 6.4 per liter of milk. He added water and sells the mixture at Rs. 8 per liter, and making 37.5% profit. Find the ratio of the water to that of milk received by customers ?

(a) 10 : 1 (b) 1 : 10 (c) 11 : 1
(d) 10 : 7 (e) 10 : 3

25. Divyaraj, Sameer and Ayush started a business each investing 20000 Rs. After 4 month Divyaraj withdraws Rs. 6000, Sameer withdraws 8000 and Ayush invest 6000

Content Partner Adda 247

more. At the end of year total profit was 65600 Rs. Find the share of Ayush ?

(a) 19200 Rs. (b) 28800 Rs. (c) 28600 Rs.
(d) 27600 Rs. (e) 25760 Rs.

26. Divyaraj and Ayush started a business in partnership investing 36000 Rs. and 24000 Rs. and after 6 month they added 4000 Rs. and 6000 Rs. respectively. $33\frac{1}{3}\%$ of total profit after one year they donated and Remaining profit shared in the ratio of invested capital. If Divyaraj gets 8800 Rs. more profit to Ayush, then find the total profit?

(a) 78000 (b) 75000 (c) 56000
(d) 91000 (e) 10000

27. Four gallons are drawn from a case full of wine. It is then filled with water. Four gallons of mixture are again drawn and the cask is re-filled with water. The ratio of the quantity of wine now left in the cask to that of the mixture in it is 36 : 49. How much does the cask hold?

(a) 30 gallons (b) 25 gallons (c) 35 gallons
(d) 28 gallons (e) None of these

28. A milkman have mixture of 240 ℓ, which contains milk and water in the ratio of 5 : 3. Milkman sold 64ℓ of mixture and added 14ℓ water in remaining mixture and again sold 76ℓ of mixture. Find milk percentage in final mixture ?

(a)$52\frac{17}{19}\%$ (b)$55\frac{17}{19}\%$ (c)$57\frac{17}{19}\%$
(d)$53\frac{17}{19}\%$ (e)$54\frac{17}{19}\%$

29. A jar contains mixture of Rum and Vodka in the ratio of 4 : 1, when 10ℓ of mixture taken out and same amount of Vodka poured into jar the ratio becomes 2 : 3 then find how many liters of Rum was contained in Jar initially ?

(a)10 l (b)12 l (c)14 l
(d)16 l (e) 18 l

30. X, Y, Z enter into partnership with capital contribution Rs. 50000, 20000 and 30000 respectively. X is a working partner and get 20% of profit for managing the business. The remaining profit is distributed in the respect of capital. If at the end of a year, X gets Rs. 300 more than Y and Z together, then find total profit is ?
(a) Rs. 1200 (b) Rs. 1700 (c) Rs. 2200
(d) Rs. 1500 (e) Rs. 1400

31. Bhavya gives 50% of his total saving of Rs. 88000 to his wife and divides the remaining amount between his two sons Uday who is 15 year old and Shikhar who is $15\frac{1}{2}$ year old. When they complete 18 years, Sikhar will get 4000 more amount than Uday on investing their amounts at 5%, annually. Find what amount invested by Shikhar ?
(a) 20000 Rs. (b) 18000 Rs. (c) 16000 Rs.
(d) 22000 Rs. (e) 24000 Rs.

32. Ankit, Yogesh and Mahesh enter into a partnership business. Ankit invested 12000 Rs. for the whole year, Yogesh invested 16000 Rs. first and after of 4 month invested 4000 Rs. more and Mahesh invested 15000 for first 9 months withdraw Rs 3000 after 9 months, if at the end of year Yogesh gets total profit of Rs. 11200, then find the sum of total profit of Ankit and Mahesh.(in Rs.)
(a) 15110 (b) 15250 (c) 15570
(d) 14750 (e) 15750

33. $\frac{3}{7}$ of monthly income of Neeraj is half the monthly income of Ankur. If Soniya expend 20% of her monthly income on Rent which is Rs. 17500 and Soniya's expenditure on rent is 50% of monthly income of Neeraj. Find ratio between monthly income of Soniya to monthly income of Ankur ?
(a)35:12 (b)35:14 (c)36:17
(d)35:13 (e)37:15

34. Raman and Nakul invested in a business. Raman invested Rs 3000 and withdraw Rs 1500 at the end of 8th month. Nakul invested Rs 1000 and Rs 3500 more at the end of 4th month but withdraw Rs 1500 at the end of 7th month. At the year's end, they earned Rs 1800. What should be Raman's share?

(a) 936 (b) 920 (c) 864
(d) 850 (e) 795

Content Partner
Adda 247

Chapter-1: Solutions

1. (a); Let, the income, expenditures and saving of P, Q and R:

	P	**Q**	**R**
Income	$\frac{3}{4}x + 8000$	x	$\frac{3}{4}x$
Expenditure on Rent	y	y	y
Expenditure on Food	z	z + 1000	z + 2000
Savings	6t	7t	4t

Now,

Savings of Q = $62\frac{1}{2}$% of income of Q = $\frac{5}{8}x$

Savings of Q and R are in the ratio 7 : 4.

∴ Savings of R = $\frac{4}{7} \times \frac{5}{8}x = \frac{5}{14}x$

Percent of R's savings out of his monthly income

$= \frac{\frac{5}{14}x}{\frac{3}{4}x} \times 100 = 47\frac{13}{21}\%$

2. (d); Let, the income, expenditures and saving of P, Q and R:

	P	Q	R
Income	$\frac{3}{4}x + 8000$	x	$\frac{3}{4}x$
Expenditure on Rent	y	y	y
Expenditure on Food	z	z + 1000	z + 2000
Savings	6t	7t	4t

Now,

Total amount spent by all the three on food = 27000

$\Rightarrow z + z + 1000 + z + 2000 = 27000$

$\Rightarrow z = 8000$

Monthly income of Q = Monthly income of P + 6000

Content Partner Adda 247

$\Longrightarrow x = \frac{3}{4}x + 8000 + 6000$

$\Longrightarrow x = 56000$

$\frac{Savings\ of\ P}{Savings\ of\ Q} = \frac{6}{7}$

$\Longrightarrow \frac{\frac{3}{4}x + 8000 - y - z}{x - y - z - 1000} = \frac{6}{7}$

Putting the values of x and z

$\Longrightarrow \frac{42000 - y}{47000 - y} = \frac{6}{7}$

$\Longrightarrow y = 12000$

Monthly rent of the apartment = 3y = Rs.36000

3. (b); Clearly, at the beginning of a year and at the end of first quarter, the investment made by B is half of the total investment made by all the three till the end of first quarter

If they invest additional amount at the end of each quarter in the same ratio as they invested at the end of the first quarter, then the total investment made by B will be half of the total investment made by all the three for the whole year.

$\therefore$ Profit of B = $\frac{1}{2} \times 17500$ = Rs.8750

4. (c); Let, the amounts invested by A, B and C:

	A	**B**	**C**
At the beginning of the year	400	900	500
At the end of first quarter	5x	9x	4x
At the end of second quarter	5y	4y	10y
At the end of third quarter	z	z	2z

Now,

9x = 4x + 500

$\Longrightarrow x = 100$

$\frac{z + z + 2z}{3} = 1200$

$\Longrightarrow z = 900$

$5x = 5y$

$\Longrightarrow x = y = 100$

So, the actual investments:

	A	B	C
At the beginning of the year	400	900	500
At the end of first quarter	500	900	400
At the end of second quarter	500	400	1000
At the end of third quarter	900	900	1800

Ratio of profit sharing among A, B and C

$= (400 \times 12 + 500 \times 9 + 500 \times 6 + 900 \times 3) : (900 \times 12 + 900 \times 9 + 400 \times 6 + 900 \times 3) : (500 \times 12 + 400 \times 9 + 1000 \times 6 + 1800 \times 3)$

$= 15000 : 24000 : 21000$

$= 5 : 8 : 7$

5. (d); Let, the amounts invested by A, B and C:

	A	B	C
At the start of a year	4x	6x	9x
At the end of four months	2y	3y	Y
At the end of eight months	3z	2z	5z

Now, the amounts invested by A:

$4x : 2y : 3z = 8 : 6 : 9$

$\Longrightarrow \quad x : y : z = 2 : 3 : 3$

So, the investments in terms of x:

	A	B	C
At the start of a year	4x	6x	9x
At the end of four months	3x	$\frac{9}{2}x$	$\frac{3}{2}x$
At the end of eight months	$\frac{9}{2}x$	3x	$\frac{15}{2}x$

Ratio of profit sharing among A, B and C

$= (4x \times 12 + 3x \times 8 + \frac{9}{2}x \times 4) : (6x \times 12 + \frac{9}{2}x \times 8 + 3x \times 4)$
$: (9x \times 12 + \frac{3}{2}x \times 8 + \frac{15}{2}x \times 4)$
$= 90x : 120x : 150x = 3 : 4 : 5$
Profit of C $= \frac{5}{12} \times 150000 =$ Rs.62500

6. (b); Let, the amounts invested by A, B and C:

	A	**B**	**C**
At the start of a year	4x	6x	9x
At the end of four months	2y	3y	Y
At the end of eight months	3z	2z	5z

Now, total amount invested by A and B, B and C, and; C and A in the year
$10x + 5y + 5z = 50000$
$15x + 4y + 7z = 63000$
$13x + 3y + 8z = 59000$
By solving these equations,
$x = 2000, y = 3000, z = 3000$
Total amount invested by A, B and C at the start of the year
$= 4x + 6x + 9x = 19x$
$= 19 \times 2000 =$ Rs.38000

7. (b); Let, the sum of Rs.300
A's part = Rs. 100
B's part = Rs. 200
Value of A's share after two years
$= 100 \times \frac{6}{7} \times \frac{6}{7} = \frac{3600}{49}$
Value of B's share after two years
$= 200 \times \frac{12}{10} \times \frac{12}{10} = 288$
Total $= 288 + \frac{3600}{49} \approx 361$
Req. Percentage $= \frac{361-300}{300} \times 100 = 20\%$

Content Partner Adda 247

8. (c); $7x + 8x + 9x + 10x + 11x = \frac{60}{100}(200 \times 5)$

$\Rightarrow 45x = 600$

$\Rightarrow x = \frac{600}{45}$

Marks obtained in 4 papers are more than 50%

9. (e);

	Wine	*Water*
First mixture	$3x$	$2x$
Second mixture	$4y$	$5y$

In 3 litres of first mixture:

Wine = 1.8 ℓ

Water = 1.2 ℓ

When $9y$ of second mixture is added

$1.8\,\ell + 4y = 1.2\ell + 5y$

or, $y = 0.6\,\ell$

$\therefore$ Resultant mixture = $9y = 9 \times 0.6 = 5.4$ litres

10. (a); $Ratio\ of\ profit = 3 \times 3 \times \frac{1}{3} : 5 \times 5 \times \frac{4}{5} : 8 \times 8 \times \frac{1}{4}$

$= 3 : 20 : 16$

$Profit\ of\ C = \frac{4800}{3} \times 16 = 25600$

11. (c); Wasim : Chintan : Yash : Zignesh = 3 : 7 : 9 : 13

$3x + 9x = 11172$

$12x = 11172$

$x = \frac{11172}{12} = 931$

Required Difference

$= (13 - 7)x = 6x = 6 \times 931 = 5586$

12. (d); Profit will be shared in ratio

$= 12 \times 6 : 8 \times \left(\frac{9}{8} \times 8\right) : 9 \times 12$

$= 12 \times 6 : 8 \times 9 : 9 \times 12 = 2 : 2 : 3$

$C's\ profit = \frac{16750}{2} \times 3 = 25125$

13. (c); A : B : C = (27000 × 4 + 22000 × 8) : (36000 × 4 + 42000 × 8) : (35000 × 8)

= 71 : 120 : 70

$C's\ share = 130500 \times \frac{70}{261}$

$= 500 \times 70 = 35000\ Rs.$

14. (c); Let in P, Quantity of A, B and C is 2x, x and x respectively

In Q → B and C is 3y and 2y

Now in final mixture → (X) A : B : C

2x : x+3y : x+2y = 8 : 13 : 10

Saving →

x = 4 unit ⇒ y = 3 unit

Quantity in P → (2 + 1 + 1) × 4 = 16 unit

Quantity in Q → (3 + 2) × 3 = 15unit

$Required\ \% = \frac{1}{16} \times 100 = 6.25\%$

15. (e); Ankit : Arun = 6000 : (9000 – 6000) = 2 : 1

ATQ,

Let Arun invested X Rs. and Ankit invested X + 8000 Rs.

$\frac{(8000+X)\times 8}{X\times 12} = \frac{2}{1}$

64000 + 8X = 24X

$X = \frac{64000}{16}$

X = 4000 Rs.

Ankit's Capital = 4000 + 8000 = 12000

16. (b); First mixture = 2 gallon

$water = 2 \times \frac{15}{100} = 0.30$

$second\ mixture = 3\ gallon$

$water = 3 \times \frac{8}{100} = 0.24$

$Total\ mixture = 2 + 3 + \frac{1}{2} = \frac{11}{2}\ gallon$

Total water = 0.30 + 0.24 + 0.50 = 1.04

$Required\% = \frac{1.04}{5.5} \times 100 = 18\frac{10}{11}\%$

17. (e); Let their initial investments be $x, 2x$ and $4x$ respectively.

∴ Required ratio

$= \left[6x + 6\left(x + \frac{x}{2}\right)\right] : [2x \times 12] : \left[6 \times 4x + 6\left(4x - \frac{4x}{4}\right)\right]$

$= \left[6 + 6 \times \frac{3}{2}\right] : 2 \times 12 : \left[24 + 6 \times \frac{12}{4}\right]$

$= 15 : 2 \times 12 : 42$

$= 5 : 8 : 14$

18. (c); Let the initial investments of Ramesh, Rajan, Ritesh be Rs. 3x, 5x and 7x respectively. Then,

(3x – 45600) : 5x : (7x + 337600) = 24 : 59 : 167

$\Rightarrow \frac{3x-45600}{5x} = \frac{24}{59} \Rightarrow x = 47200.$

∴ Ramesh initially invested Rs. (47200 × 3)

= Rs. 141600

19. (c); Let the amount of pure copper = x kg.

Pure copper + copper in 1st alloy + copper in 2nd alloy = Copper in 3rd alloy

$\Rightarrow x + \frac{5}{7} \times 14 + \frac{2}{5} \times 10 = \frac{2}{3}(14 + 10 + x)$

$\Rightarrow 14 + x = \frac{2}{3}(24 + x)$

$\Rightarrow x = 6$ kg.

20. (c); Ratio of profit

A : B : C = (27000 × 4 + 22000 × 8) : (36000 × 4 + 42000 × 8) : (35000 × 8)

= 71 : 120 : 70

$C's\ share\ in\ profit = 130500 \times \frac{70}{261}$

$= 500 \times 70 = 35000\ Rs.$

21. (a);

$$\frac{x}{y} = \frac{(30-28)}{28-25} = 2 : 3$$

22. (b); Initial ratio of milk and water = 7 : 3

Final ratio of milk and water = 1 : 1

Let amount of mixture taken out is x litre

then,

$$70 - \frac{7x}{10} = 50$$

$$x = \frac{200}{7}\ l$$

23. (a); $Ratio\ of\ profit\ = 3 \times 3 \times \frac{1}{3} : 5 \times 5 \times \frac{4}{5} : 8 \times 8 \times \frac{1}{4}$

$= 3 : 20 : 16$

$Profit\ of\ C = \frac{4800}{3} \times 16 = 25600$

24. (b); Given, S.P. = 8 Rs.

Profit = 37.5%

$$\therefore CP = \frac{8 \times 100}{137.5} = \frac{64}{11}$$

By allegation–

Water : Milk = 1 : 10

25. (b); Ratio capital of Divyaraj, Sameer and Ayush

= (20000 × 4 + 14000 × 8) : (20000 × 4 + 12000 × 8) : (20000 × 4 + 26000 × 8)

= 192000 : 176000 : 288000

$Ayush\ Share = 65600 \times \frac{288}{656} = 28800\ Rs.$

26. (a); Divyaraj : Ayush = (36000 × 6 + 40000 × 6) : (24000 × 6 + 30000 × 6) = 38 : 27

Let total profit = 100%

Remaining profit $= \frac{200}{3}\%$

ATQ,

$= \frac{200}{3} \times \frac{1}{100} \times \frac{38}{65} - \frac{200}{3} \times \frac{1}{100} \times \frac{27}{65} = 8800$

$= \frac{76-54}{195} = 8800$ =Rs 78000

27. (d); Let initial volume be $49x$

$36x = 49x\left(1 - \frac{4}{49x}\right)^2$

$\left(\frac{6}{7}\right)^2 = \left(1 - \frac{4}{49x}\right)^2$

$1 - \frac{4}{49x} = \frac{6}{7}$

$\Rightarrow x = \frac{4}{7}$

Hence, initial volume = $\frac{4}{7} \times 49 = 28$ gallons

28. (c); $Milk = 240 \times \frac{5}{8} = 150\ \ell$

$Water = 240 \times \frac{3}{8} = 90\ell$

Milk and water in 64ℓ

$Milk = 64 \times \frac{5}{8} = 40\ell$

$Water = 64 \times \frac{3}{8} = 24\ell$

Remaining amount of milk and water after selling $64l$ of mixture and $14l$ water added

Milk = (150 – 40) = 110 ℓ

Water = (90 – 24) + 14 = 80 ℓ

Milk and water in 76ℓ

$Milk = 76 \times \frac{11}{19} = 44$

$water = 76 \times \frac{8}{19} = 32$

Remaining amount of milk and water in final mixture

Milk = (110 – 44) = 66

Water = (80 – 32) = 48

$Required\% = \frac{66}{114} \times 100 = 57\frac{17}{19}\%$

29. (d); Lets Rum and Vodka in Jar is 4x and x ATQ

$\frac{4x-10\times\frac{4}{5}}{x-10\times\frac{1}{5}+10} = \frac{2}{3} \Rightarrow \frac{4x-8}{x+8} = \frac{2}{3}$

12x – 24 = 2x + 16

10x = 40

x = 4

Initially Rum in jar = 4 × 4 = 16ℓ

30. (d); Ratio of investment of X, Y and Z.

= 50 : 20 : 30 = 10 : 4 : 6

Let total profit be 100%

after 20% given to X

$Value\ of\ 1\ unit = \frac{80\%}{20} = 4\%$

(20 + 10 × 4 – (6+4) × 4)% = 300

∴ total profit = Rs. 1500

31. (e); Wife gets = $\frac{88000}{2} = 44000$

ATQ

Let Uday gets Rs. x and Shikhar gets Rs. (44000 – x)

$(44000 - x) + \frac{(44000-x)\times 2.5\times 5}{100} - x - \frac{15x}{100} = 4000$

4400000 – 100x + 550000 –12.5 x – 115x = 400000

227.5x = 4550000

X = 20000

⇒ Shikar invested = 44000 – 20000 = 24000

32. (e); Ratio of Capital invested

Ankit	:	Yogesh	:	Mahesh
= (12000 × 12)	:	(16000 × 4+20000×8)	:	(15000 × 9 + 12000 × 3)
= 144	:	224	:	171

(Ankit + Mahesh) Profit share

$= \frac{11200}{224} \times (144 + 171) = \text{Rs. } 15750$

33. (a); Monthly income of Neeraj

= 17500 × 2 = 35000

Let Monthly income of Ankur is Rs. x

$= 35000 \times \frac{3}{7} = \frac{x}{2}$

x = Rs. 30000

Required Ratio = $\frac{\frac{17500}{20} \times 100}{30000} = \frac{87500}{30000} = 35 : 12$

34. (c); Raman's investment = first 8 months + last 4 months

= 3000 × 8 + 1500 × 4 = 30,000

Nakul's investment = first 4 months + next 3 months + remaining five months

= 1000 × 4 + 4500 × 3 + 3000 × 5

= 32,500

$Therefore, \frac{Raman}{Nakul} = \frac{30000}{32500} = \frac{12}{13}$

Raman's share in profit

$= \frac{12}{(12+13)} \times 1800 = Rs\ 864$