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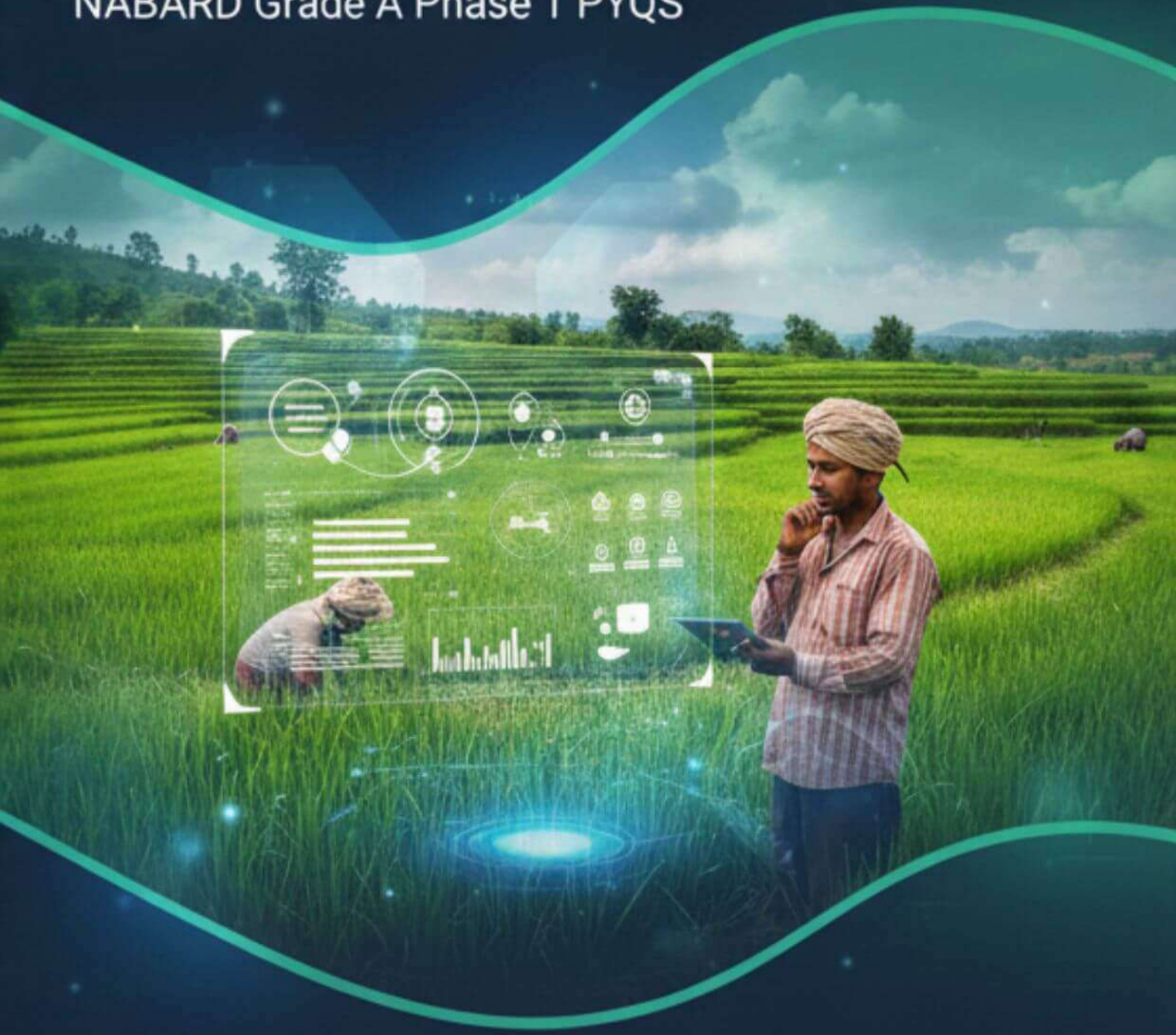
NABARD Grade A Shift 1 Previous Year Paper for 2022

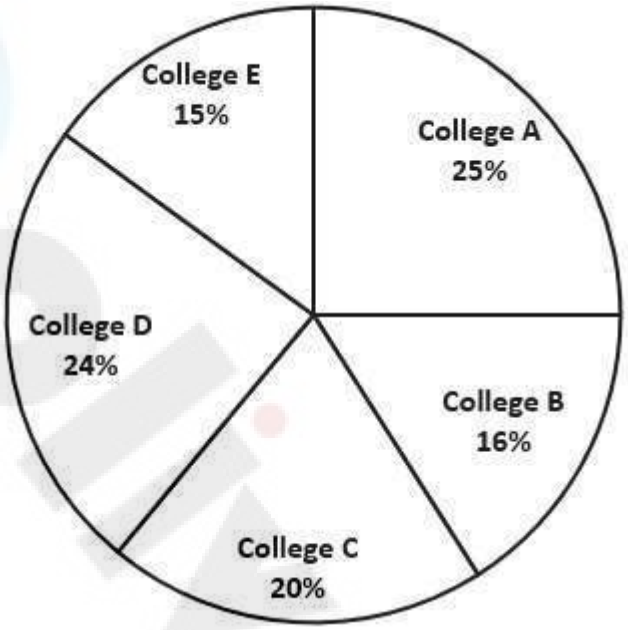
NABARD Grade A Phase 1 PYQS



2022: (Q.71 to Q.90) Morning Shift

Instructions for Q.71 to Q.76

Consider the below data about number of applications to different colleges.



Note: The average of number of applications to colleges A, C and E is 100.

Q.71) If the ratio of number of applications received by College E and C together to the number of applications received by College X is 35:18, find the number of applications received by college X?

(a) 90
(b) 85
(c) 60
(d) 75
(e) 80

Answer – (a)

Explanation -

Total number of applications to colleges A, C and E = 100 x 3 = 300
Total number of applications to colleges A, C and E in percentage = 25% + 20% + 15% = 60%
So, 60% = 300
Hence, 100% = 300/60% = 500
Number of applications received by C and E = 20% + 15% = 35%
35% of 500 = 175
Let the number of applications received by college X be 'P'.
Ratio = 175/P = 35/18
P = 175x18/35 = 90

Q.72) If the number of boys who applied in college D was 40% less than the number of girls who applied in the same college, then find out the number of boys who applied in college D?

(a) 75
(b) 60
(c) 45
(d) 50
(e) 40

Answer – (c)

Explanation -

Total applications received by college D = 24% of 500 = 120
Let the number of girls = Y
So, number of boys = 0.6Y
Y + 0.6Y = 120
1.6Y = 120
Y = 120/1.6
Y = 75
Boys = 0.6Y = 0.6 x 75 = 45

Q.73) If the number of students who applied in college C was 10 more than the actual number, then the number of students who applied in college C is what percent of the number of students who applied in college A?

(a) 80%
(b) 72%
(c) 90%
(d) 75%
(e) 88%

Answer – (e)

Explanation -

As per the question, number of applications received by C = 20% of 500 + 10 = 100 + 10 = 110
Number of applications received by A = 25% of 500 = 125
Required percentage = 110/125 x 100 = 88%

Q.74) The central angle of College B in degrees is

(a) 86.4°
(b) 57.6°
(c) 72°
(d) 54°
(e) 90°

Answer – (b)

Explanation -

Percentage of applications received by college B = 16%
Central angle of college B = 16/100 x 360 = 57.6°

Q.75) What is the difference between the number of applications received by colleges A and B together and the number of applications received by college E?

(a) 120
(b) 125
(c) 130
(d) 135
(e) 115

Answer – (c)

Explanation -

Number of applications received by A and B together = (25% + 16%) x 500 = 41% x 500 = 205
Number of applications received by E = 15% x 500 = 75
Required difference = 205 – 75 = 130

Q.76) Suppose the cost of application form in college E is Rs 100 for a boy and Rs 75 for a girl. Assume 40 boys applied in college E and the rest were girls. What is the total application amount received by college E?

(a) Rs 6625
(b) Rs 6500
(c) Rs 7000
(d) Rs 6400
(e) Rs 6325

Answer – (a)

Explanation -

Total applications received by E = 15% x 500 = 75
Number of boys = 40
Number of girls = 75 – 40 = 35
Application money received = 100x40 + 75x35 = 4000 + 2625 = Rs 6625

Q.77) In Jar A, the ratio of milk to water is 4 : 1. 25 litres of mixture is poured from Jar A to Jar B which already has 'x' litres milk and 45 litres water. The final ratio of milk to water in Jar B is 7 : 5. Find x?

(a) 70 litres
(b) 50 litres
(c) 62.5 litres
(d) 45 litres
(e) 55 litres

Answer – (b)

Explanation -

25 litres mixture in Jar A contains 20 litres milk and 5 litres water.
Initial milk in jar B = x
Final milk in jar B = x + 20
Initial water in jar B = 45
Final water in jar B = 45 + 5 = 50
Final ratio in jar B = 7/5
(x+20)/50 = 7/5
5x + 100 = 350
5x = 250

x = 50

Q.78) Solve the below two equations and mark the option which correctly describe the relation between the variable 'x' and 'y':

I. $3x^2 + 8x + 4 = 0$

II. $8y^2 + 6y + 1 = 0$

(a) $x > y$

(b) $x < y$

(c) $x \geq y$

(d) $x \leq y$

(e) No relation can be established between x and y

Answer – (b)

Explanation -

$3x^2 + 8x + 4 = 0$

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

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

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

$x = -2/3, -2$

$8y^2 + 6y + 1 = 0$

$8y^2 + 4y + 2y + 1 = 0$

$4y(2y + 1) + 1(2y + 1) = 0$

$(4y + 1)(2y + 1) = 0$

$y = -1/4, -1/2$

So, $x < y$

Q.79) Solve the below two equations and mark the option which correctly describe the relation between the variable 'x' and 'y':

I. $x^2 – 12 = 13$

II. $y^2 + 11y + 30 = 0$

(a) $x > y$

(b) $x < y$

(c) $x \geq y$

(d) $x \leq y$

(e) No relation can be established between x and y

Answer – (c)

Explanation -

$x^2 – 12 = 13$

$x^2 = 25$

$x = -5, 5$

$y^2 + 11y + 30 = 0$

$y^2 + 5y + 6y + 30 = 0$

$y(y + 5) + 6(y + 5) = 0$

$(y + 6)(y + 5) = 0$

$y = -6, -5$

So, $x \geq y$

Q.80) Solve the below two equations and mark the option which correctly describe the relation between the variable 'x' and 'y':

I. $3x^2 - 22x + 7 = 0$

II. $5y^2 - 14y + 8 = 0$

(a) $x > y$

(b) $x < y$

(c) $x \geq y$

(d) $x \leq y$

(e) No relation can be established between x and y

Answer – (e)

Explanation -

$3x^2 - 22x + 7 = 0$

$3x^2 - x - 21x + 7 = 0$

$x(3x - 1) - 7(3x - 1) = 0$

$(x - 7)(3x - 1) = 0$

$x = 7, 1/3$

$5y^2 - 14y + 8 = 0$

$5y^2 - 10y - 4y + 8 = 0$

$5y(y - 2) - 4(y - 2) = 0$

$(5y - 4)(y - 2) = 0$

$y = 4/5, 2$

So, clearly no relation can be established between x and y.

Q.81) Consider the below given number series and identify the missing number.

3, 7, 22, 89, 446, ___

(a) 2231

(b) 3123

(c) 2677

(d) 1469

(e) None of these

Answer – (c)

Explanation -

3 x 2 + 1 = 7

7 x 3 + 1 = 22

22 x 4 + 1 = 89

89 x 5 + 1 = 446

446 x 6 + 1 = 2677

Q.82) Consider the below given number series and identify the missing number.

96, 996, 371, 771, 546, ___

(a) 446

(b) 696

(c) 396

(d) 646

(e) 596

Answer – (d)

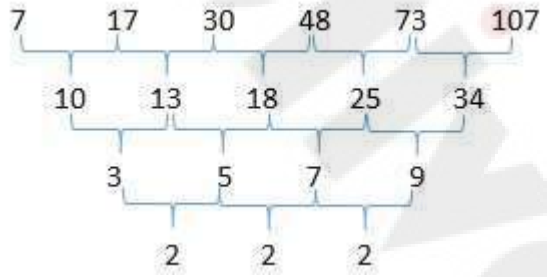
Explanation -

996 – 96 = 900; 30^2 = 900
371 – 996 = -625; 25^2 = 625
771 – 371 = 400; 20^2 = 400
546 – 771 = 225; 15^2 = 225
646 – 546 = 100; 10^2 = 100

Q.83) Consider the below given number series and identify the missing number.
7, ____, 30, 48, 73, 107

(a) 20
(b) 15
(c) 17
(d) 18
(e) 16

Answer – (c)
Explanation -



Q.84) 12 men can complete a work in 16 days. 10 women can do the same work in 24 days. 6 men leave after working for 8 days. Thereafter, 'X' women work for 4 days and complete the remaining work. What is the total men and women required to complete the work?

(a) 51
(b) 45
(c) 39
(d) 57
(e) 48

Answer – (a)
Explanation -
Total work = 12x16 = 192 man days
or 10 x 24 = 240 woman days
12m x 16 = 10w x 24
m/w = 5/4
Work done by 6 men in 8 days = work done by 5/4 x 6 women in 8 days
5/4 x 6 = 15/2 women
Work done by 15/2 women in 8 days = 15/2 x 8 = 60 woman days
Remaining work = 240 – 60 = 180 woman days
This remaining work is done by 'X' women.
X = 180/4 = 45 women
Total women and men required = 6 + 45 = 51

Q.85) Abhi's age (X) years ago is equal to Bhim's age (3X) years ago. Abhi's age 3(X) years hence will be equal to Bhim's age 6 years hence. Find the difference between the age of Abhi and Bhim.
Note: X is a positive integer.

(a) 9 years
(b) 15 years
(c) 18 years
(d) 12 years
(e) 10 years

Answer – (d)
Explanation -
A – X = B – 3X
B – A = 2X ------(1)
A + 3X = B + 6
B – A = 3X – 6 ------(2)
Equating (1) and (2),
2X = 3X – 6
X = 6
Difference between their age = 2X = 12 years

Q.86) A sum of Rs 18,000 is invested for 3 years and 5 years in Schemes A and B respectively (at simple interest). The ratio of the sum invested in the two schemes is 2 : 1. The rate of interest of scheme A was Y% p.a. and the rate of interest of scheme B is (Y+15)% p.a. If the interest from scheme A was 48% of scheme B, find Y.

(a) 12
(b) 10
(c) 15
(d) 8
(e) 7.5

Answer – (b)
Explanation -
Sum invested in scheme A = 2/3 x 18000 = 12000
Sum invested in scheme B = 1/3 x 18000 = 6000
Interest earned from scheme A = (12000 x Y x 3)/100 = 360Y
Interest earned from scheme B = (6000 x (Y+15) x 5)/100 = 300Y + 4500
360Y = 48% x (300Y + 4500)
750Y = 300Y + 4500
450Y = 4500
Y = 10

Q.87) Ravi bought a TV at a discount of 20% on the marked price but was charged additionally 5% transportation charges. The TV was subsequently sold by him for Rs X at 25% profit. If the marked price was Rs 9000, find the amount of profit.

(a) Rs 1800
(b) Rs 2250
(c) Rs 1890

(d) Rs 1440
(e) Rs 1512

Answer – (c)

Explanation -

MP = 9000
CP for Ravi = 105/100 (9000 x 0.80) = 21/20 x 7200 = 7560
Profit = 25% = 1/4 x 7560 = Rs 1890

Q.88) The ratio of the volume of a right circular cone to the volume of a cylinder is 3:10. The ratio of the radius of cone to the radius of cylinder is 3:2. If the height of the cylinder is 35 cm, find the height of the cone?

(a) 21 cm
(b) 14 cm
(c) 17.5 cm
(d) 18 cm
(e) 16 cm

Answer – (b)

Explanation -

Volume of right circular cone = $1/3 \times \pi r_1^2 h_1$
Volume of cylinder = $\pi r_2^2 h_2$
$1/3 \times \pi r_1^2 h_1 / \pi r_2^2 h_2 = 3/10$
$r_1^2 h_1 / 3 r_2^2 h_2 = 3/10$
$(3^2 \times h1) / (3 \times 2^2 \times 35) = 3/10$
h1 = 3 x 3 x 4 x 35 / 10 x 9
h1 = 14 cm

Q.89) There is a boat A which takes 3 hours 20 minutes to cover D1 km downstream. The same boat takes 5 hours to cover D2 km upstream. The ratio of D1 and D2 is 6:7. The speed of boat A in still water is what times the speed of the stream?

(a) 8 times
(b) 7 times
(c) 6 times
(d) 9 times
(e) 7.5 times

Answer – (a)

Explanation -

Let D1 = 6y
And D2 = 7y
Let speed of boat in still water be B and speed of stream be S
Speed downstream = B + S = 6y/(10/3) = 18y/10 = 9y/5 -----(1)
Speed upstream = B – S = 7y/5 -----(2)
Adding (1) and (2),
2B = 16y/5
B = 8y/5
S = y/5
B = 8S

Q.90) 'A' started a business with Rs 6,000. After 6 months, B joined with certain investment. After 2 months of B's joining, C joined with Rs 12,000. The total profit of the year was Rs 28,000 out of which B's share was Rs 8,000. What was the investment made by B?

(a) Rs 6000
(b) Rs 8000
(c) Rs 9000
(d) Rs 10000
(e) Rs 7500

Answer – (b)

Explanation -

	A	B	C
Capital	6000	Y	12000
Time	12	6	4
Capital x Time	72000	6Y	48000

B's share in profit = 8000/28000 = 2/7
So, (A + C)'s share = 1 – 2/7 = 5/7
This 5/7 is to be bifurcated in 72000:48000 (= 3:2) ratio
A's share = 3/7; B = 2/7; C = 2/7
B's share = C's share
So, 6Y = 48000
Y = Rs 8000