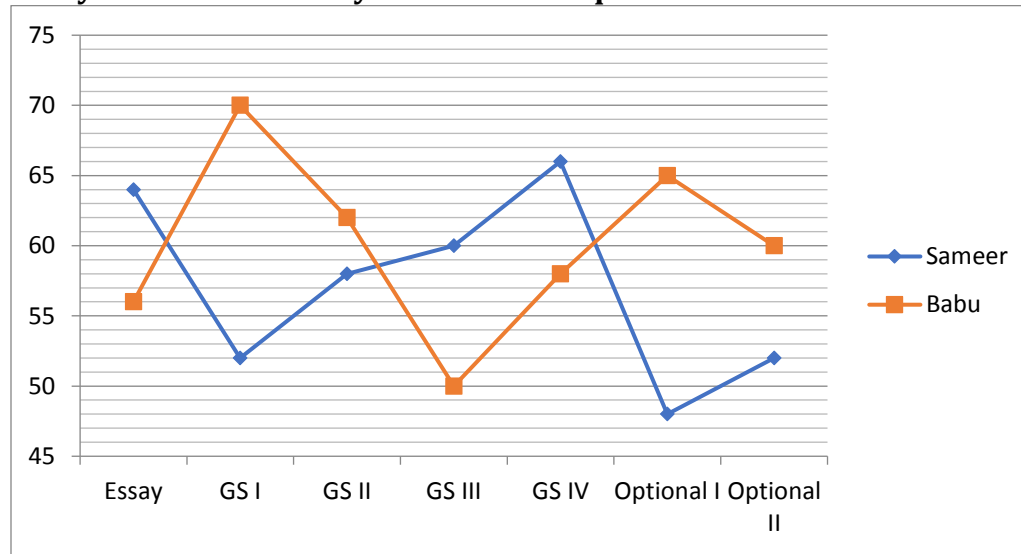Quiz Date: 22nd August 2020

Directions (1-5): The following pie chart shows the percentage distribution of marks obtained by Sameer and Babu in Mains exams of UPSC constituting of seven papers of equal maximum marks. It is known that Babu obtained 50 marks more in GS I paper than GS III paper.
Study the chart carefully to answer the questions asked below.

Q1. Find the difference in the marks obtained by Sameer in GS I and GS II papers together and that by Babu in Optional I and Optional II papers together.
(a) 36.5
(b) 32.8
(c) 37.5
(d) 38
(e) None of these

Q2. By what percent the total marks obtained by Babu in Essay is more or less than that by Sameer in GS II? (Approximately)
(a) 1.6%
(b) 5.2%
(c) 4.8%
(d) 3.4%
(e) 2.8%

Q3. Find the overall percentage of marks scored by Babu.
(a) 58.5%
(b) 60.14%
(c) 65.21%
(d) 62.82%
(e) 59.32%

Q4. In Optional I paper Sameer was unable to clear the cutoff by only 5 marks. Find by what percent the cutoff marks in Optional I paper is less than marks obtained by Babu in GS II paper.
(a) 18.5%
(b) 17.2%
(c) 15.8%
(d) 20.4%
(e) 19.4%

Q5. Find the ratio of marks obtained by Sameer in Essay, GS IV and Optional II together and that by Babu in GS III, GS I and Optional I together?
(a) 182 : 185
(b) 181 : 183
(c) 17 : 19
(d) 18 : 19
(e) None of these

Directions (6-10): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

Q6.
I. $14x^2+11x-15=0$
II. $20y^2-31y+12=0$

(a) if x > y
(b) if x ≥ y
(c) if x < y
(d) if x ≤ y
(e) if x = y or no relation can be established between x and y.

Q7.
I. $\sqrt{25}x+\sqrt{16}y = 41$
II. $\sqrt{16}x-\sqrt{25}y = 40$

(a) if x > y
(b) if x ≥ y
(c) if x < y
(d) if x ≤ y
(e) if x = y or no relation can be established between x and y.

Q8.
I. $\sqrt{x} - \dfrac{(18)^{\frac{15}{2}}}{x^2}=0$
II. $\sqrt{y} - \dfrac{(19)^{\frac{9}{2}}}{y}=0$

(a) if x > y

(b) if x ≥ y

(c) if x < y

(d) if x ≤ y

(e) if x = y or no relation can be established between x and y.

Q9.
I. $5x^2 - 29x + 36 = 0$
II. $10y^2 - 3y - 27 = 0$

(a) if x > y

(b) if x ≥ y

(c) if x < y

(d) if x ≤ y

(e) if x = y or no relation can be established between x and y.

Q10.
I. $7x^2 - 54x + 99 = 0$
II. $4y^2 - 16y + 15 = 0$

(a) if x > y

(b) if x ≥ y

(c) if x < y

(d) if x ≤ y

(e) if x = y or no relation can be established between x and y.

Q11. A 20 percent gain is made by selling the mixture of two types of ghee at Rs 480 per kg. If the type costing Rs 610 per kg was mixed with 126 kg of the other, how many kilograms of the former was mixed

(a) 138 kg

(b) 34.5 kg

(c) 69 kg

(d) Cannot be determined

(e) None of these

Q12. Three men, four women and six children can complete a work in 7 days. A woman does double the work a man does and a child does half the work a man does. How many women alone can complete this work in 7 days?

(a) 8

(b) 7

(c) 12

(d) 9

(e) 6

Q13. In a fort there was sufficient food for 200 soldiers for 31 days. After 27 days 120 soldiers left the fort. For how many extra days will the rest of the food last for the remaining soldiers?

(a) 12 days

(b) 10 days
(c) 8 days
(d) 6 days
(e) 14 days

Q14. A person bought two tables for Rs. 2200. He sells one at 5% loss and the other at 6% profit and thus on the whole he neither gains nor loses. Find the cost price of each table.
(a) Rs. 1500, Rs. 700
(b) Rs. 2000, Rs. 200
(c) Rs. 1200, Rs. 1000
(d) Rs. 1100, Rs. 1100
(e) Rs. 1150, Rs. 1050

Q15. A discount of 15% is given on the marked price of an article. The shopkeeper charges sales tax of 6% on the discounted price. If the selling price be Rs 1081.20, what is the marked price of the article?
(a) Rs 1185.20
(b) Rs 1250.20
(c) Rs 302
(d) Rs 1200
(e) Rs 1205.50

Solutions

S1. Ans.(c)

Sol.
From directions and graph
(70 – 50) % of maximum marks = 50
⇒ Maximum marks of each paper
$= \frac{50 \times 100}{20} = 250$
Marks obtained by Sameer
$= (52 + 58)$ % of 250
Marks obtained by Babu
$= (65 + 60)$ % of 250
∴ Required difference
$= (125 – 110)$ % of 250
$= \frac{15 \times 250}{100} = 37.5$

S2. Ans.(d)

Sol.

From directions and graph

(70 – 50) % of maximum marks = 50

⇒ Maximum marks of each paper

$= \frac{50 \times 100}{20} = 250$

Required percentage

$= \frac{58 - 56}{58} \times 100 \approx 3.4\%$

S3. Ans.(b)

Sol.

From directions and graph

(70 – 50) % of maximum marks = 50

⇒ Maximum marks of each paper

$= \frac{50 \times 100}{20} = 250$

Total marks

= (56 + 70 + 62 + 50 + 58 + 65 + 60) % of 250

$= \frac{421 \times 250}{100}$

= 1052.5

∴ Required percentage $= \frac{1052.5}{1750} \times 100 \approx 60.14\%$

S4. Ans.(e)

Sol.

From directions and graph

(70 – 50) % of maximum marks = 50

⇒ Maximum marks of each paper

$= \frac{50 \times 100}{20} = 250$

Cutoff marks in Optional I

$= \frac{48}{100} \times 250 + 5 = 125$

Marks by Babu in GS II

$= \frac{62}{100} \times 250 = 155$

∴ Required percentage

$= \frac{30}{155} \times 100 \approx 19.4\%$

S5. Ans.(a)

Sol.

From directions and graph

(70 − 50) % of maximum marks = 50

⇒ Maximum marks of each paper

$= \frac{50 \times 100}{20} = 250$

Required ratio $= \frac{(64+66+52)\% \text{ of } 250}{(70+50+65)\% \text{ of } 250} = \frac{182}{185}$

S6. Ans.(c)

Sol.

$14x^2 + 21x - 10x - 15 = 0$

$7x(2x + 3) - 5(2x + 3) = 0$

$x = \frac{-3}{2}, \frac{5}{7}$

$20y^2 - 15y - 16y + 12 = 0$

$5y(4y - 3) - 4(4y - 3) = 0$

$y = \frac{4}{5}, \frac{3}{4}$

$y > x$

S7. Ans.(a)

Sol.

$5x + 4y = 41$

$4x - 5y = 40$

Eq. (i) × 4, eq. (ii) × 5

$20x + 16y = 164$

$20x - 25y = 200$

$41y = -36, y = \frac{-36}{41}, x = \frac{365}{41}, x > y$

S8. Ans.(c)

Sol.

$x^{\frac{5}{2}} = (18^3)^{\frac{5}{2}}$

$x = 18^3$

$y^{\frac{3}{2}} = (19^3)^{\frac{3}{2}}$

$y = 19^3$

$x < y$

S9. Ans.(b)

Sol.

$5x^2 - 29x + 36 = 0$

$5x^2 - 20x - 9x + 36 = 0$

$5x(x - 4) - 9(x - 4) = 0$

$x = 4, \frac{9}{5}$

$10y^2 - 3y - 27 = 0$

$10y^2 - 18y + 15y - 27 = 0$

$2y(5y - 9) + 3(5y - 9)$

$y = \frac{9}{5}, -\frac{3}{2}$, $x \geq y$

S10. Ans.(a)

Sol.

$7x^2 - 54x + 99 = 0$

$7x^2 - 33x - 21x + 99 = 0$

$x(7x - 33) - 3(7x - 33)$

$x = \frac{33}{7}, 3$

$4y^2 - 16y + 15 = 0$

$4y^2 - 10y - 6y + 15 = 0$

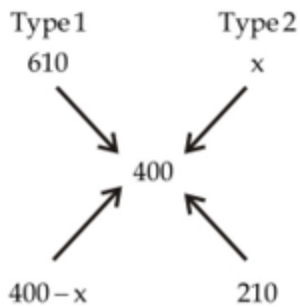$2y(2y - 5) - 3(2y - 5) = 0$

$y = \frac{5}{2}, 3/2$

x>y

S11. Ans.(d)

Sol.

Cost price of mixture

$= 480 \times \dfrac{100}{120}$

$= 400$

According to law of mixture

Type 1   Type 2

610   x

400

400 − x   210

$\dfrac{\text{Ghee of type 1}}{\text{Ghee of type 2}} = \dfrac{400 - x}{210}$

⇒ Here we do not know about price of other type of ghee so cannot determine the required answer.

S12. Ans.(b)

Sol.

$(3M + 4W + 6C) \rightarrow 7 \text{ days}$

$W = 2M, \qquad C = M/2$

∴ Required no. of women

$= \dfrac{3}{2} + 4 + 6 \times \dfrac{1}{4}$

$= 7 \text{ women}$

S13. Ans.(d)

Sol.

$200 \times 31 = 27 \times 200 + x \times 80$

Or, x = 10 days

∴ Food last for 10 − 4 i.e. 6 days after 31 days

S14. Ans.(c)

Sol.

Let the cost price of one table be x.

Then, cost price of other table will be (2200 − x).

$$x \times \frac{95}{100} + (2200 - x) \times \frac{106}{100} = 2200$$

⇒ 95x + 233200 − 106x = 220000

⇒ 11x = 13200

⇒ x = Rs 1200

And, 2200 − x = Rs 1000

S15. Ans.(d)

Sol.

Let marked price is Rs. x

$$\therefore x \times \frac{85}{100} \times \frac{106}{100} = 1081.2$$

⇒ x = Rs. 1200

For any Banking/Insurance exam Assistance, Give a Missed call @ 01141183264