Q26. Cost price of a pen is 50 Rs. and that of notebook is 140 Rs. If pen is sold at 200% profit, then to purchase 10 such note books how many pens are required to sell if only profit money is used to buy notebooks?
(a) 16  
(b) 18  
(c) 14  
(d) 20  
(e) 22

Q27. Length of two trains are 150 m and 200 m respectively and the ratio (shorter: longer) of their speed is 2 : 5. If they cross each other in opposite direction in 15 second then in what time faster train will overtake the slower train.
(a) 20 seconds  
(b) 25 seconds  
(c) 32 seconds  
(d) 35 seconds  
(e) 27 seconds

Directions (28-30): Pie-chart given below shows investment (in terms of percentage) out of total investment of five different persons. Study the questions carefully and answer them.

Q28. B and E started a business together. B left the business 9 months after starting of business. Find the difference between profit shares of B and E if total annual profit is Rs. 15,400?
(a) Rs.2100  
(b) Rs.4200  
(c) Rs.1400  
(d) Rs.2800  
(e) Rs.3500
Q29. A and D started a business together after 6 months ‘A’ is replaced by ‘C’. D left the business after 2 months of ‘A’ while ‘C’ worked for total ‘x’ months. Out of total profit of Rs 13,050, ‘A’ got Rs 6750, then find the value of ‘x’.
(a) 10  
(b) 8  
(c) 6  
(d) 4  
(e) 2  

Q30. ‘A’, ‘F’ and ‘C’ started a business together. F invested Rs. 4000 more than amount invested by C. F left the business after 6 months of starting of business. After 2 months more, ‘C’ left the business. Out of annual profit if A and C together got Rs 8750 then find total annual profit got by all three together?
(a) Rs 11,250  
(b) Rs 10,000  
(c) Rs 12,500  
(d) Rs 13,750  
(e) Rs 15,000  

Directions (31-35): Solve the given quadratic equations and mark the correct option based on your answer —

Q31. I. (x − 2)^2 = 9  
II. (2y + 8)^2 = 16  
(a) x < y  
(b) No relation can be established between x and y.  
(c) x > y  
(d) x ≤ y  
(e) x ≥ y  

Q32. I. x^2 − 16x + 64 = 0  
II. y^2 − 16y + 63 = 0  
(a) x > y  
(b) x ≤ y  
(c) x ≥ y  
(d) x < y  
(e) No relation can be established between x and y.
Q33. I. \( \frac{25}{x^2} - \frac{15}{x} + 2 = 0 \)
II. \( \frac{40}{y^2} + 1 = \frac{13}{y} \)
(a) \( x < y \)
(b) \( x \geq y \)
(c) No relation can be established between \( x \) and \( y \).
(d) \( x \leq y \)
(e) \( x > y \)

Q34. I. \( \frac{48}{x^2} - \frac{14}{x} + 1 = 0 \)
II. \( \frac{45}{y^2} + \frac{1}{y} = 2 \)
(a) No relation can be established between \( x \) and \( y \).
(b) \( x \leq y \)
(c) \( x < y \)
(d) \( x > y \)
(e) \( x \geq y \)

Q35. I. \( x^2 + 3x - 4 = 0 \)
II. \( y^2 + 10y + 24 = 0 \)
(a) \( x \leq y \)
(b) \( x < y \)
(c) \( x > y \)
(d) No relation can be established between \( x \) and \( y \).
(e) \( x \geq y \)

Directions (36-40): 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

Q36. What is distance between A and B?
I. Two persons Amit and Abhi started simultaneously from A to B with their speed in ratio 4 : 5.
II. Abhi reached reached B one hour earlier than Amit.
III. Difference between speed of Amit and Abhi is 20 km/hr.
(a) Only I and II.
(b) Only II and III
(c) All I, II and III
(d) Cannot be answered even including all three statement
(e) None of these
Q37. What is the area of rectangle?
I. If ratio of length and breadth of the rectangle is 3 : 2.
II. Circumference of a circle is 440 m and breadth of rectangle is 1/7 th of radius of the circle.
III. If length is 50% more than breadth.
(a) Only III
(b) Only II and either I or III.
(c) Only II
(d) All I, II and III
(e) None of these

Q38. How many students failed in class 11th?
I. 400 Students passed in class 11th.
II. No. of students failed in class 11th is 20% of those failed in class 12th.
III. Ratio of student appeared to that of failed in class 11th is 5 : 3.
(a) Only I and III
(b) Only II
(c) Only I and II
(d) All I, II and III
(e) Cannot be answered even including all three statements.

Q39. What is the rate of interest?
I. S.I. accrued in two years on an amount at same rate of interest is Rs. 44,000.
II. The amount after some years on S.I. is Rs. 154000.
III. Difference between the C.I. and S.I. earned in two years on the same amount and at the same rate of interest is Rs. 120.
(a) Only I and III
(b) Only III
(c) Only II and III
(d) Cannot be answered even including all statement
(e) None of these

Q40. What is the sum of two number?
I. The bigger no. is 6 more than the smaller no.
II. 40% of smaller no. is equal to 30% of bigger no.
III. The ratio b/w half of the bigger no. & one-third of smaller no. is 2 : 1.
(a) Only II & III
(b) Only I & II
(c) Any two of the three statements
(d) All statement is required
(e) None of these
Q41. A container contains 165 liters of milk. Some quantity of milk is taken out and half of that quantity of milk, water is added in the container. Now ratio of milk to water in the container becomes 5:3. What is the quantity of water added in it?
(a) 40 lit
(b) 45 lit
(c) 60 lit
(d) 30 lit
(e) 90 lit

Q42. Two boxes contain 4 and 16 balls respectively. Two balls in the first box and four in the second, are black. If a box is chosen randomly and two balls are drawn at random from it, what is the probability that at least one ball is black if the ball is not replaced?
(a) \(\frac{11}{20}\)
(b) \(\frac{43}{120}\)
(c) \(\frac{77}{120}\)
(d) \(\frac{9}{20}\)
(e) None of these

Q43. Train A, travelling at 84 kmph, overtook train B, traveling in the same direction, in 10 seconds. If train B had been traveling at twice its speed, then train A would have taken 22.5 seconds to overtake it. Find the length of train B, given that it is half the length of train A.
(a) 50 m
(b) 100 m
(c) 200 m
(d) 150 m
(e) None of these

Q44. A solid sphere of radius 6 cm is melted and re-casted into a hollow cylinder of uniform thickness. If the external radius of the base of the cylinder is 5 cm and its height is 32 cm, find the uniform thickness of the cylinder?
(a) 3 cm
(b) 1.5 cm
(c) 1 cm
(d) 2.5 cm
(e) None of these
Q45. X and Y entered into partnership with Rs. 700 and Rs. 600 respectively. After another 3 months, X withdrew two-sevenths of his stock but after 3 months, he puts back three-fifths of what he had withdrawn. The total profit at the end of the year is Rs. 726. How much of this should X receive?
(a) Rs. 336
(b) Rs. 366
(c) Rs. 633
(d) Rs. 663
(e) None of these

Direction (46-50): Table given below shows percentage of men out of total men who worked on odd days in three different months and rest of the men are working on even days of the respective month. Study the table carefully and answer the following questions.

<table>
<thead>
<tr>
<th>Months</th>
<th>Total Number of Men worked</th>
<th>Percentage of men worked on odd number days</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>1000</td>
<td>30%</td>
</tr>
<tr>
<td>April</td>
<td>1500</td>
<td>20%</td>
</tr>
<tr>
<td>August</td>
<td>750</td>
<td>60%</td>
</tr>
</tbody>
</table>

Note: Each man works for 8 hours per day.
Total man-hours = Total man worked × Total day of work × 8 hours.

Q46. Total man-hours on odd days of March is what % of the total man-hours on even days of April?
(a) 26 $\frac{2}{3}$%
(b) 18 $\frac{2}{3}$%
(c) 33 $\frac{1}{3}$%
(d) 16 $\frac{2}{3}$%
(e) 58 $\frac{1}{3}$%

Q47. Total man hour of April is how much more or less than the total man hour of August?
(a) 80,000
(b) 83,200
(c) 84,800
(d) 86,400
(e) 88,000

Q48. Find the ratio between man-hour on even days of March to man hour on even days of August?
(a) 6 : 1
(b) 7 : 3
(c) 8 : 3
(d) 3 : 7
(e) 9 : 2
Q49. Man-hour on odd days of April is how much % less than the man hour on odd days of August?
(a) 33\(\frac{1}{3}\)%
(b) 40%
(c) 37.5%
(d) 62.5%
(e) 60%

Q50. What is the average of man hours on even days of all three months together.
(a) 88,000
(b) 66,000
(c) 86,000
(d) 78,000
(e) 74,000