Logical Reasoning & Data Interpretation LRDI Set-6

Passage for Questions 1 to 4:

Two football teams, A and B, from the same college play against each other frequently. During a particular year, the two teams played exactly 100 matches against each other. It is also known that the number of goals scored in any match was at most 4; the number of goals scored by A in any match was at least 1; the number of goals scored by B in any match was at least 1. The following information is known about the number of goals scored by the two teams in each match: i. The number of matches that A won was 27 more than the number of matches in which B scored at least 2 goals. ii. The number of matches that ended as a draw was the same as the number of matches in which A scored exactly 1 goal. iii. The number of matches in which the difference in the number of goals scored by the two teams was at least 2 was twice the number of matches in which 3 goals were scored in total. iv. The sum of the number of matches that A did not win and those it won by at most 1 goal was 15 more than the number of matches that it won. v. The number of matches in which one team scored exactly one goal more than the other team was 20 less than the number of matches in which one team scored exactly two goals more than the other team.

Question 1/20

If the Goal Difference of a team for any set of matches is defined as the number of goals scored by the team minus the number of goals scored against the team in all those matches, what is the Goal Difference of B for all the matches that it played against A?

Options:
(a) -70
(b) -80
(c) -90
(d) -60

Question 2/20

How many matches ended as a draw?

Options:
(a) 42
(b) 38
(c) 36
(d) 40

Question 3/20

In how many matches did A score 2 goals more than B?

(Type in your answer)

Question 4/20

How many goals did A score in all the matches that it played against B during the year?

Options:
(a) 196
(b) 200

(c) 204
(d) 188

Passage for Questions 5 to 8:

Answer the questions on the basis of the information given below. Eric uses a software for storing the passwords for all his accounts. Eric's passwords for any of his accounts comprise only alphabets. After he enters any password into the software, the software encrypts the password and displays only the encrypted password to anyone who accesses it. Any password that is entered in the software is encrypted in the following manner: o   Each alphabet from A to Z is assigned a number from 1 to 26 respectively. o   Each letter in the password, from left to right, is assigned a number according to the above rule. o   In any password, only if any vowel is immediately followed by a consonant, the number assigned to the vowel is increased by 1. Otherwise, the number assigned to the vowel remains the same. The software displays the passwords only as a string of the numbers assigned to each letter of the password based on the above rules.

Question 5/20
If the software displayed an encrypted password for an account as '2156416', which of the following can be the password of that account?

Options:
(a) BAEFDAE
(b) UEEDAF
(c) UEEDP
(d) More than one of the above

Question 6/20
Eric's friend, Jack, who was not aware of any of Eric's passwords, used the software to retrieve an encrypted password for one of Eric's accounts. If Jack was able to work out the correct password from the encrypted password, using only the rules of encryption mentioned above, which of the following could have been the encrypted password for that account?

Options:
(a) 1561617
(b) 16516139
(c) 16521135
(d) More than one of the above

Question 7/20
What will be the encrypted password that the software displays for a password entered as 'BADAEN'?

Options:
(a) 2241614
(b) 2241514
(c) 2141514
(d) 2141614

Question 8/20
Which of the following sequence of numbers can never be one of the encrypted passwords?

Options:
(a) 21123
(b) 151819
(c) 159612
(d) 22115

Passage for Questions 9 to 12:

Exactly 100 players participated in a tournament comprising four rounds.

- All 100 players played the **first round**, and 80 players went through to the **second round**.

- Each player had a sponsorship deal with **at least one** brand among **Yonex** and **Monster**.

- In the first round, the number of players who had a sponsorship deal **only with Yonex** was **twice** the number of players who had a sponsorship deal **only with Monster**.

- Among the players who had a sponsorship deal with **both Yonex and Monster**, exactly **thirteen** players did not go through to the second round.

Question 9/20

In the second round, how many players had a sponsorship deal **only with Monster**?

Question 10/20

What is the **difference** between the number of players in the first round who had a sponsorship deal with **both Yonex and Monster** and the number of players in the second round who had a sponsorship deal with **Monster**?

Question 11/20

Which of the following values is the **highest**?

Options:
(a) The number of people in the second round who had a sponsorship deal with Monster
(b) The number of people in the first round who had a sponsorship deal only with Monster
(c) The number of people in the second round who had a sponsorship deal with both Yonex and Monster
(d) The number of people in the second round who had a sponsorship deal only with Yonex

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Question 12/20

In the second round, the number of players who had a sponsorship deal with Yonex was:


Passage for Questions 13 to 16

Seven persons — A, B, C, D, E, F, and G — went on a trip. At the beginning of the trip, each person had with them a certain amount of money. The amounts were in the ratio **1 : 2 : 3 : 4 : 5 : 6 : 7**, not necessarily in that order.

During the trip:

- Each person spent a part of their money (but no one spent more than what they had).

Mock Test 6

- The **pie chart** (not shown here) displays how much each person spent as a **percentage of the total money spent** by all seven people.

- The **bar chart** (also not shown here) displays the amount of money **left with each person** at the end of the trip.

Percentage of Amount Spent

Amount left with each person (in ₹)
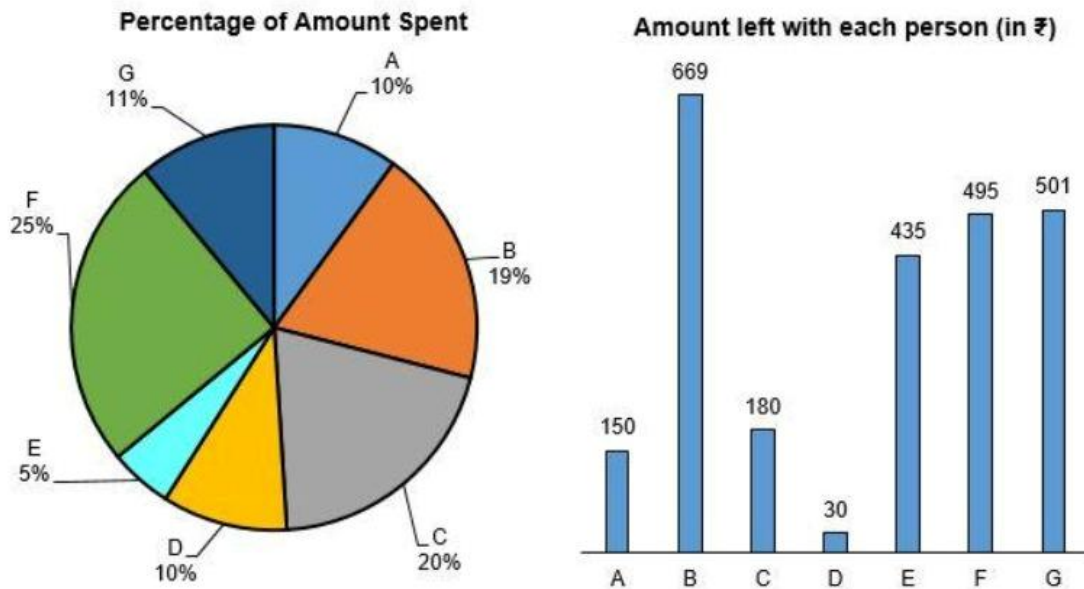
Use this information to answer the following questions:

Q13/20
How many persons spent at least 30% of the amount that they had at the beginning of the trip?

Options:
(a) 2
(b) 6
(c) 5
(d) 4

Q14/20
What is the **least amount spent** by any person as a **percentage of the total amount** they had at the beginning of the trip?

Options:
(a) 8.225%
(b) 16.667%
(c) 9.375%
(d) 10.275%

Q15/20
What is the **difference** between the amount spent by **B** during the trip and the amount that **E** had at the beginning of the trip?

Mock Test 6

Options:

(a) 309

(b) 208

(c) 70

(d) 366

Q16/20

How many persons had **less money at the beginning** of the trip than what **F spent** during the trip?

Options:

(a) 0

(b) 1

(c) 2

(d) 3

Passage for Questions 17 to 20

A factory has **eight machines**, each manufacturing the **same electric component**.
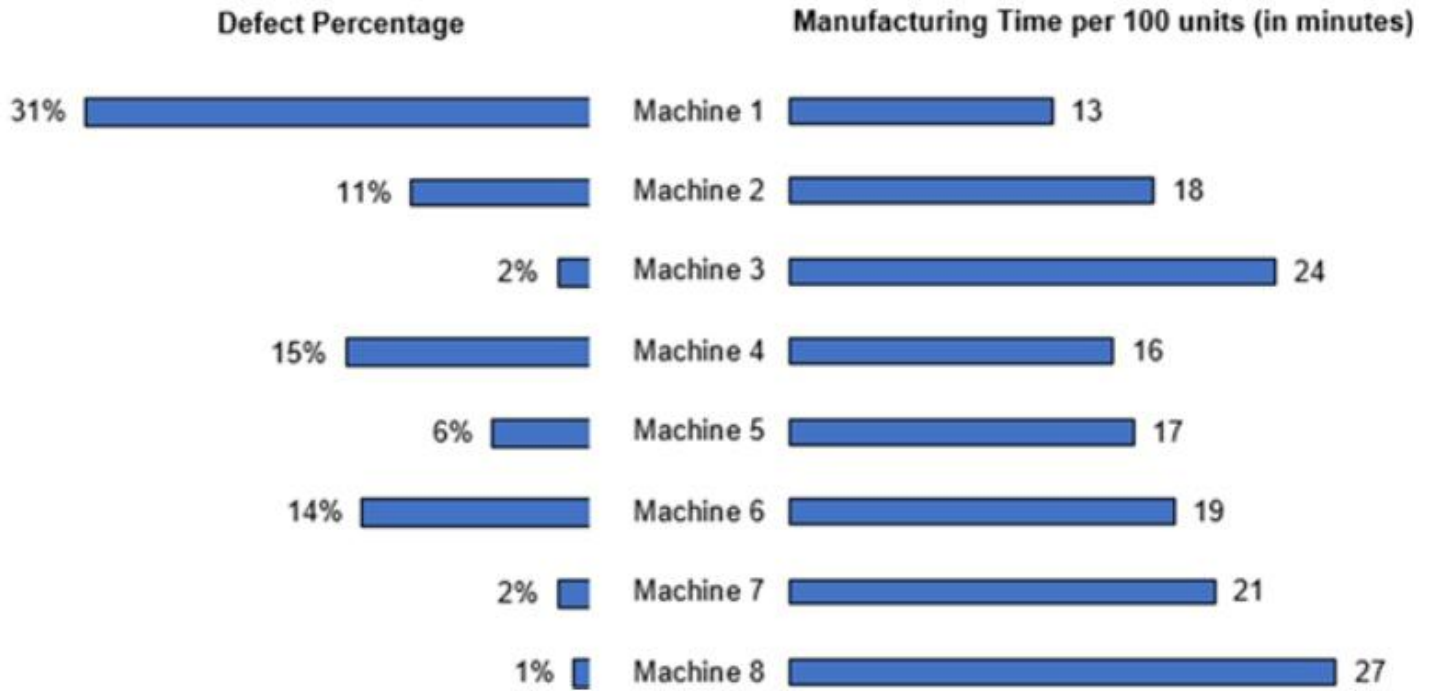Details:

- Each machine produces **100 units per lot**.

- The **time to manufacture one lot** varies across machines.

- Each machine also has a **defect percentage**, which is the **average % of defective units** made per shift.

- Each **shift is 8 hours** (480 minutes).

- A machine only starts a new lot if it can **complete** it within the same shift.

The following two graphs (not shown here) provide:

1. The **time (in minutes)** taken by each machine to produce one lot.

2. The **defect percentage** for each machine.

Mock Test 6

Defect Percentage

31%	Machine 1
11%	Machine 2
2%	Machine 3
15%	Machine 4
6%	Machine 5
14%	Machine 6
2%	Machine 7
1%	Machine 8

Manufacturing Time per 100 units (in minutes)

Machine 1	13
Machine 2	18
Machine 3	24
Machine 4	16
Machine 5	17
Machine 6	19
Machine 7	21
Machine 8	27

Note: During a shift, any machine starts processing a lot (of 100 units of the component), only if there is sufficient time remaining in the shift to complete processing the entire lot.

Use this information to answer the questions.

Q17/20
Which machine produces the **highest number of non-defective units** in one shift?

Options:
(a) Machine 1
(b) Machine 5
(c) Machine 4
(d) Machine 2

Q18/20
What is the **estimated number of defective units** manufactured by **Machine 6** in one shift?

Options:
(a) 350
(b) 354
(c) 2150
(d) 2160

Q19/20
What is the **average time (in seconds)** taken by **Machine 7** to manufacture one **non-defective unit** over a full shift?

Mock Test 6

What is the **maximum number of units** that **any machine** can manufacture in one shift?

Mock Test 6

Answer Key

1. (a) –70

2. (d) 40

3. 36

4. (a) 196

5. (No answer – context only)

6. (c) 16521135

7. (a) 2241614

8. (b) 151819

9. 25

10. 12

11. (d) The number of people in the second round who had a sponsorship deal only with Yonex

12. 55

13. (d) 4

14. (c) 9.375%

15. (a) 309

16. (b) 1

17. (b) Machine 5

18. (a) 350

19. 13.36

20. 3600