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- Rajesh Balasubramanian

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SET 1: Amal, Bimal & Komal

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1. Q02, Q06, Q09, Q11, and Q12 were rejected and the other questions were accepted.
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1. How many questions were DEFINITELY created by Amal?
2. How many questions were DEFINITELY created by Komal?
3. How many questions were DEFINITELY created by the SMEs?
4. How many questions were DEFINITELY disapproved by Bimal?
A) 3 B) 7 C) 4 D) 5

5. The approval ratio of a reviewer is the ratio of the number of questions (s)he approved to the number of questions (s)he reviewed. Which option best describes Amal's approval ratio?
A) lies between 0.25 and 0.75
B) either 0.25 or 0.75
C) lies between 0.25 and 0.50
D) 0.25

6. How many questions created by Amal or Bimal were disapproved by at least one of the other reviewers?
A) 5 B) 4 C) 7 D) 2

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Answer

Video Solution

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SET 2: Javelin Throw

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ii. If a player throws first in a round AND he was also the last (among the players in the current round) to throw in the previous round, then the player is said to get a double. Two players got a double.

iii. In each round of the second phase, exactly one player improved his score. Each of these improvements was by the same amount.

iv. The gold and bronze medalists improved their scores in the fifth and the sixth rounds respectively. One medal winner improved his score in the fourth round.

v. The difference between the final scores of the gold medalist and the silver medalist, as well as the difference between the final scores of the silver medalist and the bronze medalist was 1.0 m.

1. Which two players got the double?

- A) P1, P10
- B) P2, P4
- C) P1, P8
- D) P8, P10

2. Who won the silver medal?

- A) P1
- B) P9
- C) P7
- D) P5

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3. Who threw the last javelin in the event?

- A) P1
- B) P7
- C) P9
- D) P10

4. What was the final score (in m) of the silver-medalist?

- A) 89.6
- B) 87.2
- C) 88.4
- D) 88.6

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v. The difference between the final scores of the gold medalist and the silver medalist, as well as the difference between the final scores of the silver medalist and the bronze medalist was 1.0 m.

5. Which of the following can be the final score (in m) of P8?

- A) 0
- B) 82.7
- C) 81.9
- D) 85.1

6. By how much did the gold medalist improve his score (in m) in the second phase?

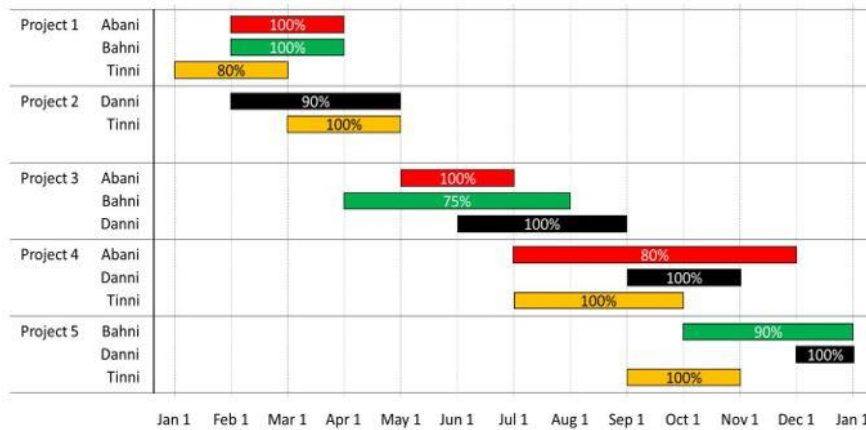
- A) 1.2
- B) 2.0
- C) 2.4
- D) 1.0

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The figure above shows the schedule of four employees – Abani, Bahni, Danni and Tinni – whom Dhoni supervised in 2020. Altogether there were five projects which started and concluded in 2020 in which they were involved. For each of these projects and for each employee, the starting day was at the beginning of a month and the concluding day was the end of a month, and these are indicated by the left and right end points of the corresponding horizontal bars. The number within each bar indicates the percentage of assigned work completed by the employee for that project, as assessed by Dhoni.

For each employee, his/her total project-month (in 2020) is the sum of the number of months (s)he worked across the five project, while his/her annual completion index is the weightage average of the completion percentage assigned from the different projects, with the weights being the corresponding number of months (s)he worked in these projects. For each project, the total employee-month is the sum of the number of months four employees worked in this project, while its completion index is the weightage average of the completion percentage assigned for the employees who worked in this project, with the weights being the corresponding number of months they worked in this project.

1. Which of the following statements is/are true?

I: The total project-month was the same for the four employees.

II: The total employee-month was the same for the five projects.

- A) Neither I nor II
 B) Only II
 C) Both I and II
 D) Only I

2. Which employees did not work in multiple projects for any of the months in 2020?

- A) Only Abani and Bahni
 B) All four of them
 C) Only Tinni
 D) Only Abani, Bahni and Danni

3. The project duration, measured in terms of the number of months, is the time during which at least one employee worked in the project. Which of the following pairs of the projects had the same duration?

- A) Project 3, Project 5
 B) Project 1, Project 5
 C) Project 4, Project 5
 D) Project 3, Project 4

4. The list of employees in decreasing order of annual completion index is:

- A) Danni, Tinni, Bahni, Abani
 B) Bahni, Abani, Tinni, Danni
 C) Danni, Tinni, Abani, Bahni
 D) Tinni, Danni, Abani, Bahni

SET 4: Pure & Impure Solutions

Each of the bottles mentioned in this question contains 50 ml of liquid. The liquid in any bottle can be 100% pure content (P) or can have certain amount of impurity (I). Visually it is not possible to distinguish between P and I. There is a testing device which detects impurity, as long as the percentage of impurity in the content tested is 10% or more.

For example, suppose bottle 1 contains only P, and bottle 2 contains 80% P and 20% I. If content from bottle 1 is tested, it will be found out that it contains only P. If content of bottle 2 is tested, the test will reveal that it contains some amount of I. If 10 ml of content from bottle 1 is mixed with 20 ml content from bottle 2, the test will show that the mixture has impurity, and hence we can conclude that at least one of the two bottles has I. However, if 10 ml of content from bottle 1 is mixed with 5 ml of content from bottle 2, the test will not detect any impurity in the resultant mixture.

1. 5 ml of content from bottle A is mixed with 5 ml of content from bottle B. The resultant mixture, when tested, detects the presence of I. If it is known that bottle A contains only P, what BEST can be concluded about the volume of I in bottle B?
A) 10 ml or more
B) Less than 1 ml
C) 10 ml
D) 1 ml
2. There are four bottles. Each bottle is known to contain only P or only I. They will be considered to be "collectively ready for despatch" if all of them contain only P. In minimum how many tests, is it possible to ascertain whether these four bottles are "collectively ready for despatch"?
3. There are four bottles. It is known that three of these bottles contain only P, while the remaining one contains 80% P and 20% I. What is the minimum number of tests required to definitely identify the bottle containing some amount of I?
4. There are four bottles. It is known that either one or two of these bottles contain(s) only P, while the remaining ones contain 85% P and 15% I. What is the minimum number of tests required to ascertain the exact number of bottles containing only P?
A) 1
B) 4
C) 3
D) 2

Answer

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1. How many questions were DEFINITELY created by Amal?

Correct Answer: **3**

2. How many questions were DEFINITELY created by Komal?

Correct Answer: **1**

3. How many questions were DEFINITELY created by the SMEs?

Correct Answer: **3**

4. How many questions were DEFINITELY disapproved by Bimal?

- A) 3 B) 7 **C) 4** D) 5

5. The approval ratio of a reviewer is the ratio of the number of questions (s)he approved to the number of questions (s)he reviewed. Which option best describes Amal's approval ratio?

- A) lies between 0.25 and 0.75** B) either 0.25 or 0.75
C) lies between 0.25 and 0.50 D) 0.25

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iv. The gold and bronze medalists improved their scores in the fifth and the sixth rounds respectively. One medal winner improved his score in the fourth round.

v. The difference between the final scores of the gold medalist and the silver medalist, as well as the difference between the final scores of the silver medalist and the bronze medalist was 1.0 m.

1. Which two players got the double?

- A) P1, P10
- B) P2, P4
- C) P1, P8
- D) P8, P10

2. Who won the silver medal?

- A) P1
- B) P9
- C) P7
- D) P5

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3. Who threw the last javelin in the event?

- A) P1
C) P9
B) P7
D) P10

4. What was the final score (in m) of the silver-medalist?

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C) 88.4
B) 87.2
D) 88.6

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5. Which of the following can be the final score (in m) of P8?

- A) 0
C) 81.9
B) 82.7
D) 85.1

6. By how much did the gold medalist improve his score (in m) in the second phase?

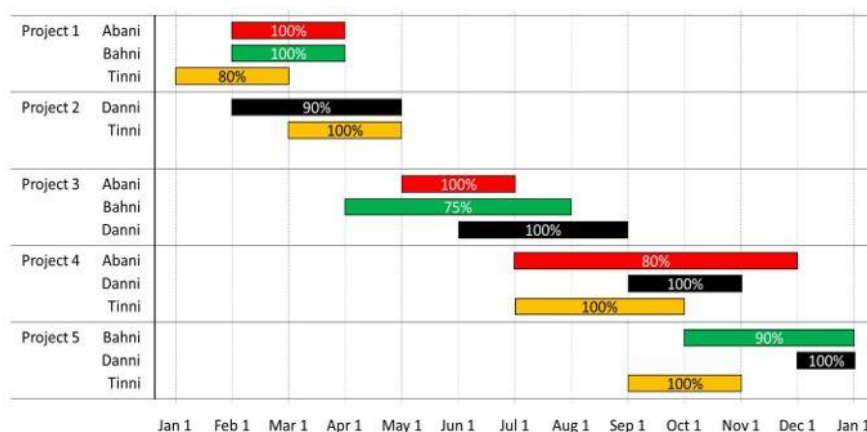
- A) 1.2
C) 2.4
B) 2.0
D) 1.0

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The figure above shows the schedule of four employees – Abani, Bahni, Danni and Tinni – whom Dhoni supervised in 2020. Altogether there were five projects which started and concluded in 2020 in which they were involved. For each of these projects and for each employee, the starting day was at the beginning of a month and the concluding day was the end of a month, and these are indicated by the left and right end points of the corresponding horizontal bars. The number within each bar indicates the percentage of assigned work completed by the employee for that project, as assessed by Dhoni.

For each employee, his/her total project-month (in 2020) is the sum of the number of months (s)he worked across the five project, while his/her annual completion index is the weightage average of the completion percentage assigned from the different projects, with the weights being the corresponding number of months (s)he worked in these projects. For each project, the total employee-month is the sum of the number of months four employees worked in this project, while its completion index is the weightage average of the completion percentage assigned for the employees who worked in this project, with the weights being the corresponding number of months they worked in this project.

1. Which of the following statements is/are true?

I: The total project-month was the same for the four employees.

II: The total employee-month was the same for the five projects.

A) Neither I nor II

B) Only II

C) Both I and II

D) Only I

2. Which employees did not work in multiple projects for any of the months in 2020?

A) Only Abani and Bahni

B) All four of them

C) Only Tinni

D) Only Abani, Bahni and Danni

3. The project duration, measured in terms of the number of months, is the time during which at least one employee worked in the project. Which of the following pairs of the projects had the same duration?

A) Project 3, Project 5

B) Project 1, Project 5

C) Project 4, Project 5

D) Project 3, Project 4

4. The list of employees in decreasing order of annual completion index is:

A) Danni, Tinni, Bahni, Abani

B) Bahni, Abani, Tinni, Danni

C) Danni, Tinni, Abani, Bahni

D) Tinni, Danni, Abani, Bahni

Sol. SET 4: Pure & Impure Solutions

Each of the bottles mentioned in this question contains 50 ml of liquid. The liquid in any bottle can be 100% pure content (P) or can have certain amount of impurity (I). Visually it is not possible to distinguish between P and I. There is a testing device which detects impurity, as long as the percentage of impurity in the content tested is 10% or more.

For example, suppose bottle 1 contains only P, and bottle 2 contains 80% P and 20% I. If content from bottle 1 is tested, it will be found out that it contains only P. If content of bottle 2 is tested, the test will reveal that it contains some amount of I. If 10 ml of content from bottle 1 is mixed with 20 ml content from bottle 2, the test will show that the mixture has impurity, and hence we can conclude that at least one of the two bottles has I. However, if 10 ml of content from bottle 1 is mixed with 5 ml of content from bottle 2, the test will not detect any impurity in the resultant mixture.

1. 5 ml of content from bottle A is mixed with 5 ml of content from bottle B. The resultant mixture, when tested, detects the presence of I. If it is known that bottle A contains only P, what BEST can be concluded about the volume of I in bottle B?

A) 10 ml or more

B) Less than 1 ml

C) 10 ml

D) 1 ml

2. There are four bottles. Each bottle is known to contain only P or only I. They will be considered to be "collectively ready for despatch" if all of them contain only P. In minimum how many tests, is it possible to ascertain whether these four bottles are "collectively ready for despatch"?

Correct Answer: 1

3. There are four bottles. It is known that three of these bottles contain only P, while the remaining one contains 80% P and 20% I. What is the minimum number of tests required to definitely identify the bottle containing some amount of I?

Correct Answer: 2

4. There are four bottles. It is known that either one or two of these bottles contain(s) only P, while the remaining ones contain 85% P and 15% I. What is the minimum number of tests required to ascertain the exact number of bottles containing only P?

A) 1

B) 4

C) 3

D) 2

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