CAT 2021 Question Paper & Answer Key
DILR Slot-3

Comprehension:

Three reviewers Annal, Bimal, and Komal are tasked with selechng questions from a pool of 13 questions ‹Q01 to Q13). Questions can be created by external °subject matter experts" (SMEs) or by one of the three reviewers. Each of the reviewers either approves or disapproves a question that is shown to them. Their decisions lead to eventual acceptance or rejection of the question in the manner described below.

If a question is created by an SME, it is reviewed first by Annal, and then by Bimal. If both of them approve the question, then the question is accepted and is not reviewed by Komal. If both disappmve the question, it is rejected and is not reviewed by Komal. If one of them ap[xoves the question and the other disapproves it, then the question is reviewed by Komal. Then the question is accepted only if she approves it.

A quesbon created by one of the reviewers is decided upon by the other two. If a question is created by Amal, then it is first revs by Bimal. If Bimal approves the question, then it is accepted. Otherwise, it is rev¥=nx I by Komal. The question is then accepted only if Komal approves it. A similar process is folkn'zed for questions created by Bimal, whose questions are first reviewed by Komal, and then by Annal only if Komal disapproves it. Questions created by Komal are first reviewed by Annal, and then, if required, by Bimal.

The following facts are known about the review [xocess after its completion.

1. Q02, Q06, Q09, Q11, and Q12 were rejected and the other questions were accepted.
2. Annal reviewed only QD2, Q03, Q04, Q06, Q08, Q10, Q11, and Q13.

3. Bimal rev   d only QD2, Q04, Q06 through Q09, Q12, and Q13.
4. Komal reviewed only Q01 through Q05, Q07, QD8, Q09, Q11, and Q12.

SubQuesñon No : 1

Q.1   **How marry questions wnre DEFINITELY created by Annal?**

Case Sensitivity. No

Answer Type. Equal

Possibk• Answer. 3

Comprehension:

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If a question is created by an SME, it is reviewed first by Arnal, and then by Bimal. If both of them approve the question, then the question is accepted and is not reviewed by Komal. If both disapprove the question, it is rejected and is not reviewed by Komal. If one of them aptxoves the question and the other disapproves it, then the question is reviewed by Komal. Then the question is accepted only if she approves A.

A question created by one of the reviewers is decided upon by the other two. If a question is created by Annal, tf+en it is first reviewed by Bimal. If Bimal approves the question, then it is accepted. Otherwise, it is reviewed by Komal. The question is then accepted only if Komal approves it. A similar process is folkn¥ed for questions created by Bimal, whose questions are first reviewed by Komal, and then by Annal only if Komal disapproves it. Questions created by Komal are first reviewed by Annal, and then, if required, by Bimal.

The following facts are known about the review [xocess after its completion.

1. Q02, Q06, Q09, Q11, and Q12 were rejected and the other questions were accepted.
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3. Bimal reviewed only QD2, Q04, QA through Q09, Q12, and Q13.
4. Komal reviewed only Q01 through Q05, Q07, QD8, Q09, Q11, and Q12.

SubQuesñon No : 2

O.2   **How many questions were DEFINITELY created by Komal?**

Case Sensitivity. No

Answer Type. Equal

Passible Answer. i

Comprehension:

Three reviewers Amal, Bimal, and Komal are tasked with selecting questio+ls from a pool of 13 questions ‹Q01 to Q13). Questions can be created by external "subject matter experts" (SMEs) or by one of the three reviewers. Each of the reviewers either approves or disapproves a question that is shown to them. Their decisions lead to eventual acceptance or rejection of the question in the manner described below.

If a question is created by an SME, it is reviewed first by Amal, and then by Bimal. If both of them approve the question, then the question is accepted and is not reviewed by Komal. If both disapprove the question, it is rejected and is not reviewed by Komal. If one of them approves the question and the other disapproves it, then the question is reviewed by Komal. Then the question is accepted only if she approves it

A question created by one of tñe reviewers is decided upon by the other two. If a question is created by Annal, then it is first revs by Bimal. If Bimal approves the question, then it is accepted. Otherwise, it is reviewed by Komal. The question is then accepted only if Komal approves it. A similar process is folkn'zed for questions created by Bimal, whose questians are first reviewed by Komal, and then by Amal only if Komal disapproves it. Questions created by Komal are first reviewed by Annal, and then, if required, by Bimal.

The following facts are known about the review process after its completion.

1. Q02, Q06, Q09, Q11, and Q12 were rejected and the other questions were accepted.
2. Annal reviewed only QD2, Q03, Q04, Q06, Q08, Q10, Q11, and Q13.

3. Bimal revknved only QD2, Q04, Q06 through Q09, Q12, and Q13.
4. Komal reviewed only Q01 through Q05, Q07, QD8, Q09, Q11, and Q12.

SubQuesñon No : 3

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

Case Sensitivity. No

Answer Type. Equal

Possibk' Answer. 3

Comprehension:

Three reviewers Amal, Bimal, and Komal are tasked with selecting questions from a pool of 13 questions (Q01 to Q13). Questions can be created by external "subject matter experts" (SMEs) or by one of the three reviewers. Each of the reviewers either approves or disapproves a question that is shown to them. Their decisions lead to eventual acceptance or rejection of the question in the manner described below.

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A question created by one of the reviewers is decided upon by the other two. If a question is created by Amal, then it is first reviewed by Bimal. If Bimal approves the question, then it is accepted. Otherwise, it is reviewed by Komal. The question is then accepted only if Komal approves it. A similar process is followed for questions created by Bimal, whose questions are first reviewed by Komal, and then by Amal only if Komal disapproves it. Questions created by Komal are first reviewed by Arrial, and then, if required, by Bimal.

The following facB are known about the review process after its completion.

Q.4

Ans

1. Q02, Q06, Q09, Q11, and Q12 were rejected and the other questions were accepted.
2. Amal revkn¥ed only Q02, Q03, Q04, Q06, Q08, Q10, Q11, and Q13.
3. Bimal reviewed only Q02, Q04, Q06 through Q09, Q12, and Q13.
4. Komal reviewed only Q01 through Q05, Q07, Q08, Q09, Q11, and Q12.

SubQuest?on Mo : 4

How many questions were DEFINITELY disapproved by Bimal?

   1. **4**

   3. 3

   4. S

Comprehension:

Three reviewers Amal, Bimal, and Komal are tasked with selecting questions from a pool of 13 questions (Q01 to Q13). Questions can be created by external "subject matter experts" (SMEs) or by one of the three reviewers. Each of the reviewers either approves or disapproves a question that is shown to them. Their decisions lead to eventual acceptance or rejection of the question in the manner described below.

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A question created by one of the reviewers is decided upon by the other two. If a question is created by Amal, then it is first reviewed by Bimal. If Bimal approves the question, then it is accepted. Otherwise, it is reviewed by Komal. The question is then accepted only if Komal approves it. A similar process is followed for questions created by Bimal, whose questions are first reviewed by Komal, and then by Amal only if Komal disapproves it. Questions created by Komal are first reviewed by Arrial, and then, if required, by Bimal.

The following facts are known about the review process after its completion.

1. Q02, Q06, Q09, Q11, and Q12 were rejected and the other questions were accepted.
2. Amal revxn¥ed only Q02, Q03, Q04, Q06, Q08, Q10, Q11, and Q13.
3. Bimal reviewed only Q02, Q04, Q06 through Q09, Q12, and Q13.
4. Komal reviewed only Q01 through Q05, Q07, Q08, Q09, Q11, and Q12.

SubQuest?on Mo : 5

Q.5 **The** approval raño of a reviewer is the rago of the number of questions (s)he approved to dse number of questions (s)he reviewed. Which opñon best describes Amal's

Ans

1. 0.25

2. lies between 0.25 and 0.75

3. lies between 0.25 and 0.50

4. eib+er D.25 or D.75

Comprehension:

Three reviewers Amal, Bimal, and Komal are tasked with selecting questions from a pool of 13 questions (Q01 to Q13). Questions can be created by external "subject matter experts" (SMEs) or by one of the three revkn¥ers. Each of the reviewers either approves or disapproves a question that is shown to them. Their decisions lead to eventual acceptance or rejection of the question in the manner described below.

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The following facts are known about the review process after its completion.

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3. Bimal reviewed only Q02, QD4, Q06 through Q09, Q12, and Q13.
4. Komal reviewed only Q01 through Q05, Q07, Q08, Q09, Q11, and Q12.

SubQuest?on Ha : 6

Q.6   **How many questions created by Amal or Bimal were disapproved by at least one of the other reviewers?**

Ans   ✗ 1. 7

        2.

        3. 4

        4 Z

Comprehension:

10 players — P1, P2, P10 - competed in an international javelin throw event. The number (after P) of a player reflects his rank at the beginning of the event, with rank 1 going to the topmost player. There were two phases in the event with the first phase consisting of rounds 1, 2, and 3, and the second phase consisting of rounds 4, 5, and 6. A throw is measured in terms of the distance it covers (in meters, up to one decimal point accuracy), only if the throw is a 'valid' one. For an invalid throw, the distance is taken as zero. A player's score at the end of a round is the maximum distance of all his throws up to that round. Players are re-ranked after every round based on their current scores. In case of a tie in scores, the player with a prevailing higher rank retains the higher rank. This ranking determines the order in which the players go for their throws in the next round.

In each of the rounds in the first phase, the players throw in increasing order of their latest rank, i.e. the player ranked 1 at that point throws first, followed by the player ranked 2 at that point and so on. The top six players at the end of the first phase qualify for the second phase. In each of the rounds in the second phase, the players throw in decreasing order of their latest rank i.e. the player ranked 6 at that point throws first, followed by the player ranked 5 at that point and so on. The players ranked 1, 2, and 3 at the end of the sixth round receive gold, silver, and bronze medals respectively.

All the valid throws of the event were of dis0nct distances (as per stated measurement accuracy). The tables below show distances (in meters) covered by all valid throws in the first and the third round in the event.

Distances covered bY all the valid throws in the first round

Player	Distance (in m)
P1	82.9
P3	81.5
PS	86.4
	82.5
P7	87.2
P9	84.1

Distances covered by all the valid throws in the third round

Player	Distance (in m)
P1	88.6
P3	79.0
P9	81.4

The following facts are also known.

i. Among the throws in the second round, only the last two were valid. Both the throws enabled these players to qualify for the second phase, with one of them qualifying with the least score. None of these players won any medal.
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.

Su bQuestion No : 7

Q.7   Which two players got the double?

Ans   1 '1. ”3

✗ 4. P1, P10

SubQuestion No : 8

Q.8   Who won the silver medal?

1. P7

3. P1

4. PS

SubQuestion No : 9

Q.9   Who threw the last javelin in the event?

Ans   1. PM

2. P10

3. P1

SubQuestion No : 10

Q.10   What was the final score (in m) of the silver-medalist?

Ans   1. 89 6

2. 80° C

3. 87.2

4. 88.4

Q.11   Which of the following can be the final score (in m) of P8?

Ans 1. 8S.

2. 81.9

3. 0

@ 4 82 ?

SubQuestion No : 12

Q.12   By how much did the gold medalist improve his score (in m) in the second phase?

Ans   1. 1.2

2. 1.0

..0

Comprehension:

Each of the bottles mentioned in this question contains 50 ml of liquid. The liquid in any bottle can be 10D96 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 1096 or more.

For example, suppose bottle 1 contains only P, and bottle 2 contains 8096 P and 2096 1. 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 1. If 10 ml of content fern baffle 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.

SubQuest?ori No : 13

Q.13 **5 ml of content from bottle A is mixed with 5 ml of oontecit from bottte B. The resultant mixture, when tested, detects dse presence of F. If a is known that bottle A contains or+ly P, what BEST can be concluded about dse vcgume of I in bottle B?**

Ans
1. 10 ml or more
2. Laes than 1 ml
3. 10 rN
x. 1 rrg

Comprehension:

Each of the baffles mentioned in this question contains 50 ml of liquid. The liquid in any bottle can be 10096 pure content (P) or can have certain amount of impuñty (I). Visually it is not possible to distinguish between P and 1. There is a testing device which detects impurity, as long as the percentage of impurity in the content tested is 1095 or more.

For example, suppose bottle 1 contains only P, and bottle 2 contains 8096 P and 2096 1. 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 1. If 1D 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 1. However, if 10 ml of content frarn bottle 1 is mixed with 5 ml of content from bottle 2.

the test will not detect any impurily in the resultant mixture.

SubQuesñon No : 14

Q.14 **There are four botges. Each bottle is known to contain onTy P or only I. They will be considered to be "collectively ready for despatch" if all of them contain onFy P. In minimum how many tests, is it possible to ascertain whedser these four bottles are "collectively ready for despatch˚?**

Case Sensigvity. No

Answer Type. Equal

Possible Answer. i

Comprehension:

Each of the bottles mentioned in this question contains 50 ml of liquid. The liquid in any bottle can be 10096 pure content (P) or can have certain amount of impurity (I). Visually it is not possible to distingush between P and 1. There is a testing device which detects impurity, as long as the percentage of impurity in the content tested is 1096 or more.

For example, suppose bottle 1 contains only P, and bottle 2 contains 8096 P and 2096 1. 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 1. 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 corx:lude that at least one of the two bottles has 1. 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.

SubQuest?on No : 15

Q.15   There are four botges. ft is known dsat three of these botges **contain** only **P, while** the remaining one contains 80% P and 20•4 1. What is dse **minimum number of** tests required to definitely **identify** the bofile **containing** some amount of I?

Case Sensitivity. No

Answer Type. Equal

Possible Answer: 2

Given Answer . 4

Comprehension:

Q.16 **There are four bottles. ft is known that either one** ar **two of these** botges **contain{s) only** P, **while the remaining ones contain** 85•4 P and **15%** 1. **What is the minimum number of tests required to ascertain the** exact number of bofifes **containing only** P?
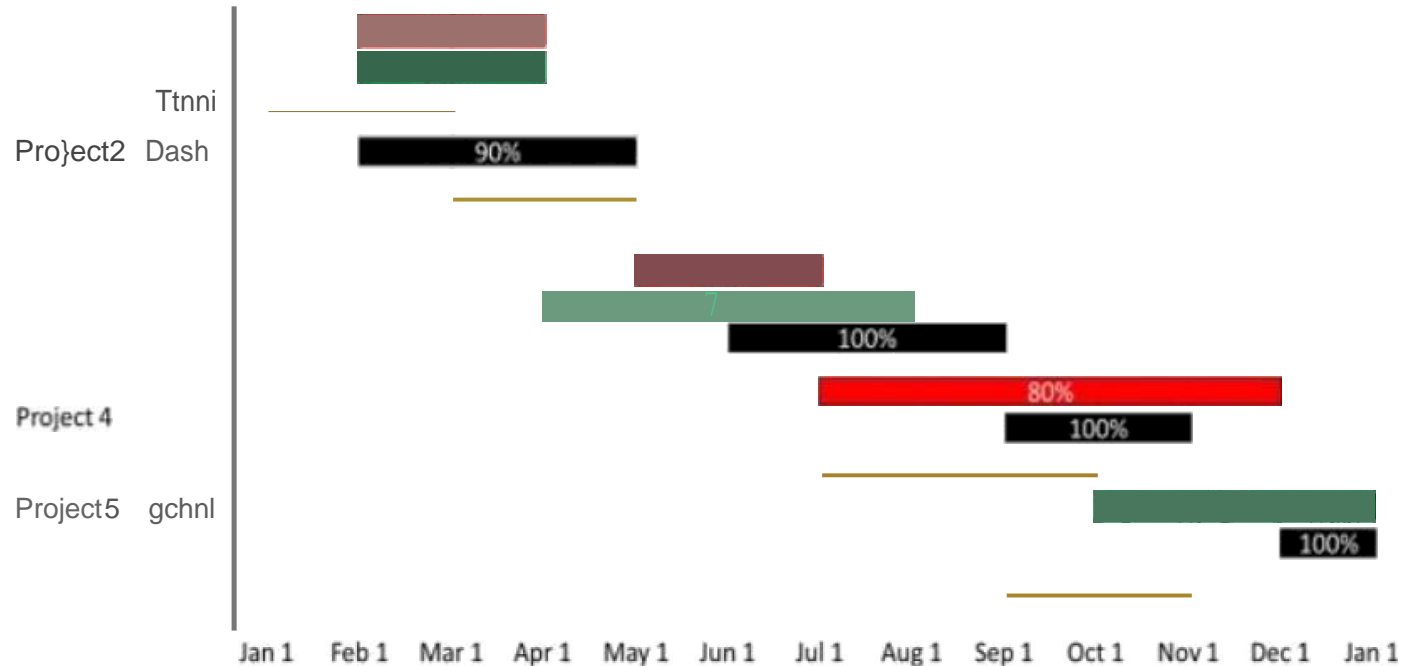
Ans 1. 4

2. 3

3. 2

4. i

Comprehension:

The figure above shows the schedule of four employees —Abani, Bahni, Danni and Tinni — wham Dhoni supervised in 2020. Altogether there were five projects whk i started and concluded in 2020 in whk i they were invoked. 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 d#Terent 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 far the employees who worked in this project, with the weights being the corresponding number of months they worked in this project.

SubQuest?on Mo : 17

Q.17   Which of dse following statements is/are true?

I: The total project-month was the same for dse four employees.
II: The total employee-month was dse same for the five projects.
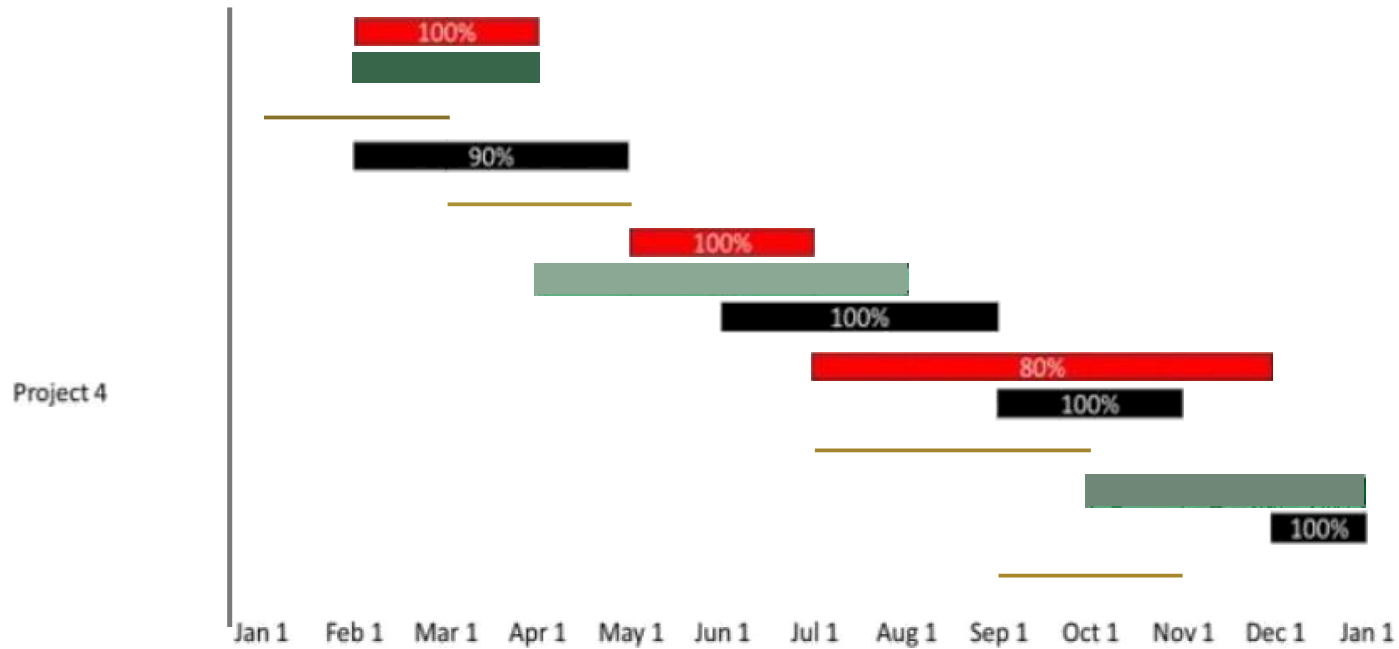
Ans

1. Only II

2. Neither I nor I

3. Both I and II

4. Only I

Comprehensio t:

The figure above shows the schedule of four employees —Abani, Bahni, Danni and Tmni — whom Dhoni supervised in 2D20. Altogether there were five projects which stai1ed and concluded in 2020 in which they were invoked. For each of these projects and for each employee, the starting day was at the beginriirg of a month and the concluding day was the end of a mo+Cth, and these are indicated by the left ant right end pokits of the corresponding horizontal bars. The number within each bar indicates the percentage of assigned work completed by the employee for that [xoject, as assessed by Dhɔni.

Q.18

Ans

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2020) is the sum of tf\e number of months (s)h£ WOrked across the five project, while his/her annul completion index is the weightage average of the completion percentage assigned from the different projeds, with the weights being the correspor¥ling 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 co   I£ tion index is the weightage average of the completion percentage assigned fOE the employees who worked in this project, with the weights being thB corresponding number of months they worked in this project.
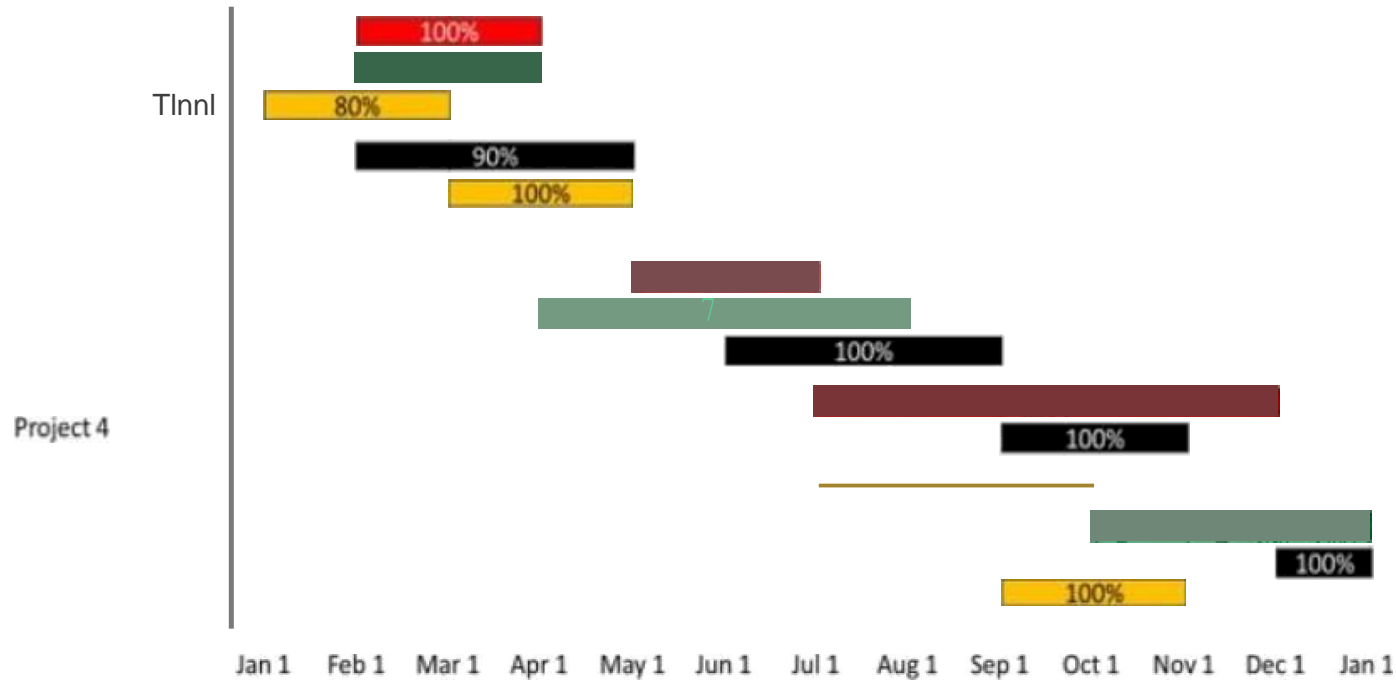
SubQuest?on Mo : 18

Which employees did not work in multiple projects for any of the mondss in 2020?

   1. Ordy T›nni

   3. Only Abani, Bahni and Danni

Comprehension:

The figure above shows the schedule of four employees — Abani, Bahni, Danni and Tinni — whom Dhoni supervised in 2020. Altogether there were five projects who started and concluded in 2020 in wh<h 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 weghts being the corresponding number of months (s)he worked in these projects. For each project, the total emplDyee-month is the sum of the number of months four employees worked in the project, while its completion index is the weightage average of the completion percentage assigned for the empk›yees who worked in the project, with the weights being the corresponding number of months they worked in this project.

SubQuest?on Ha : 19

Q.19 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?
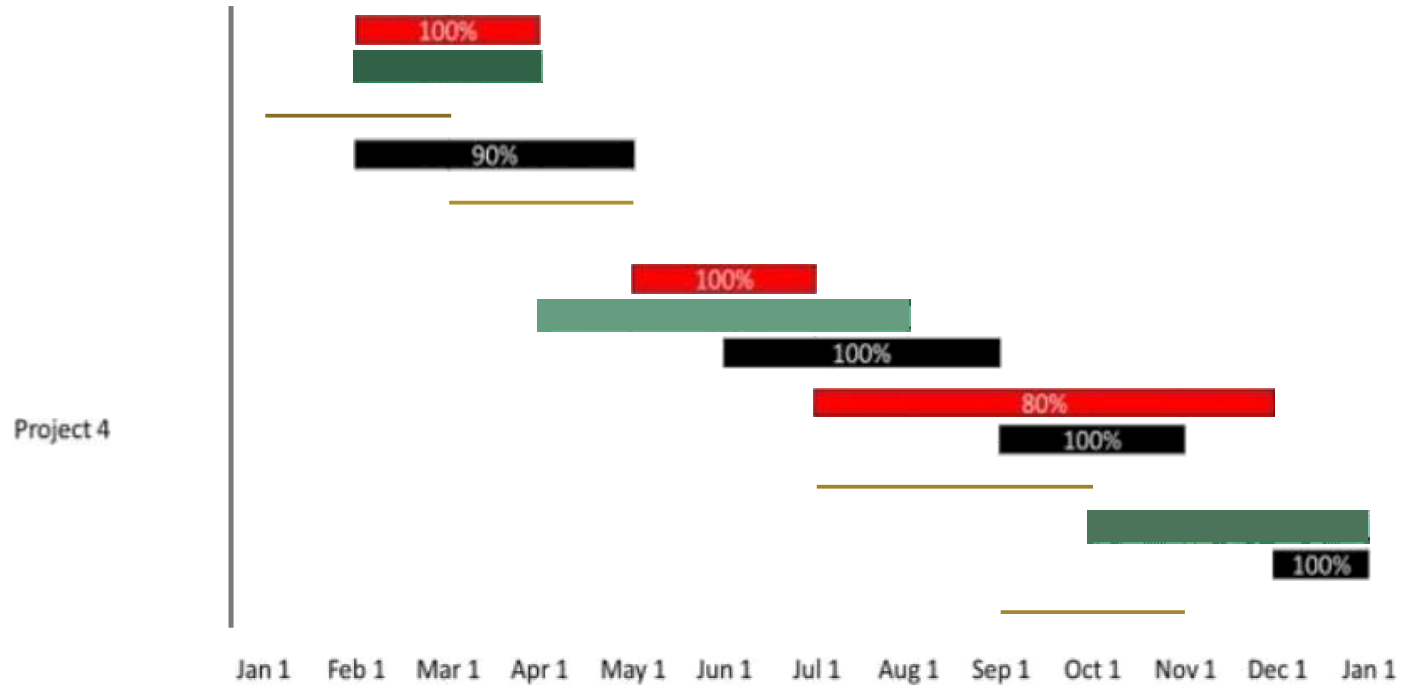
Ans ‹y 1. Project 3, Project 4

2. Project 1, Project 5

3. Project 3, Project 5

4. Project 4, Project 5

Comprehension:

The figure above shows the schedule of four employees —Abani, Bahni, Danni and Tinni — whom Dhoni supervised in 2020. Altogetha there were Gve projects which started and cr›ncluded in 2020 in whk i they were involved. For each ofthese projects and f‹s 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 thB employee for that project, as assessed by Dhoni.

For each employee, his/her total project-month (in 2D20) 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.

Q.2D The **list o'f employees in** decreasing **order of annual completion Index is:**

Ans   ‹g ' 1. Danni, Tinni, Abani, Bahni

2. Tinni, ii,   Abdni, Bdkni

3. Eni, Tnni, Bahni, Abani