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|  | Student 1 | Student 2 | Student 3 |
| Name |  |  |  |
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| Signature |  |  |  |

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| **Experiment I. Determination of the Densities of Fruit Juices** |
| Questions(Points) | Data and Answers |
| I-1(6.0) | I-1-1(1.25) |  | *d0* | *d1* | *d2* | *d3* | *d4* |
| Masses (g) |   |  |  |  |  |
| Lengths of spring (cm) |   |  |  |  |  |
| I-1-2(2.5) |  |
| I-1-3(1.25) | Slope | cm/g | Intercept | cm |

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| **Experiment I. Determination of the Densities of Fruit Juices (Cont’d)** |
| I-1(6.0) | I-1-4(1.0) | (Show your working) |
| Spring Constant | N/m |
| I-2(6.0) | I-2-1 (2.0) | Immersed weights | 50g + 50g | 50g + 50g + 50g |
| Volume of water without weights in it (cm3) |  |  |
| Volume read from scale after immersing weights (cm3) |  |  |
| Volume difference (cm3)(= Volume of liquid displaced) |  |  |

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| **Experiment I. Determination of the Densities of Fruit Juices (Cont’d)** |
| Questions(Points) | Data and Answers |
| I-2(6.0) | I-2-2(2.0) | Juice | Apple | Mandarin |
| Lengths of spring with the weights outside juice (cm) |  |  |
| Immersed weights | 50g + 50g | 50g + 50g + 50g | 50g + 50g | 50g + 50g + 50g |
| Length of spring with the weights after immersing (cm) |  |  |  |  |
| Length difference (cm) |  |  |  |  |
| I-2-3(2.0) | Buoyant force (N) |  |  |  |  |
| I-3(2.0) | Density (g/cm3) |  |  |  |  |
| Average density (g/cm3) |  |  |

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| Total points for experiment I |  |

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| **Experiment II. Determination of the Citric Acid Contents in Fruit Juices**  |
| Questions(Points) | Data and Answers |
| II-1(7.0) | Show your calculation of the average titer (for both juices) |
|  | Juices |
| Mandarin | Apple |
| Trials | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Initial Readings (in ) |  |  |  |  |  |  |  |  |
| Final Readings (in ) |  |  |  |  |  |  |  |  |
| Volumes of NaOH solution consumed for titration |  |  |  |  |  |  |  |  |
| Average volume |  | Average volume |  |

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| **Experiment II. Determination of the Citric Acid Contents in Fruit Juices (Cont’d)** |
| Questions(Points) | Data and Answers |
| II-2(2.0) | (Show your working) |
| Moles of NaOH | Mandarin |  | Apple |  |

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|  | Student 1 | Student 2 | Student 3 |
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| **Experiment II. Determination of the Citric Acid Contents in Fruit Juices (Cont’d)** |
| Questions(Points) | Data and Answers |
| II-3(2.0) | (Show your working) |
| Moles of citric acid | Mandarin |  | Apple |  |
| Masses of citric acid | Mandarin |  | Apple |  |

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|  | Student 1 | Student 2 | Student 3 |
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| **Experiment II. Determination of the Citric Acid Contents in Fruit Juices (Cont’d)** |
| Questions(Points) | Data and Answers |
| II-4(2.0) | (Show your working) |
| Percent concentration of citric acid | Mandarin | % | Apple | % |

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| Total points for experiment II |  |

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| **Experiment III. Anatomy and classification of fruits and seeds** |
| Question(Points) | Data and Answers |
| III-1(1.0) | Location of the structure(s) originated from A |  |
| III-2(2.5) | Location of the tissues originated from A, B, C and D |  |

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| **Experiment III. Anatomy and classification of fruits and seeds (Cont’d)** |
| Question(Points) | Data and Answers |
| III-3-1(2.0) |  | fruits |
|  |  |
| Fruits for ① and ② |  |  |
| III-3-2(2.0) | Classification schemes for ‘c’ and ‘d’ | characters |
| c | d |
|  |  |
| III-3-3(4.0) |

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| **Fruit****Classification** | **A****Acorn** | **B****Apple** | **C****Bean pod** | **D****Lychee** | **E****Lemon** | **F****Persi-mmon** | **G****Rice** | **H****Straw-berry** |
| **Single seed fruit** |  |  |  |  |  |  |  |  |
| **Many seeded fruit** |  |  |  |  |  |  |  |  |
| **Aggregate fruit** |  |  |  |  |  |  |  |  |
| **Multiple fruit** |  |  |  |  |  |  |  |  |
| **True fruit** |  |  |  |  |  |  |  |  |
| **Accessory fruit** |  |  |  |  |  |  |  |  |
| **Fleshy fruit** |  |  |  |  |  |  |  |  |
| **Dry fruit** |  |  |  |  |  |  |  |  |

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|  | Student 1 | Student 2 | Student 3 |
| Name |  |  |  |
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| III-3-4(1.5) |  |
| Number | Alphabet in Box 1 |
| ③ |  |
| ④ |  |
| ⑤ |  |
| ⑥ |  |

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| Total points for experiment III |  |