| Index Number |
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# Anglo-Chinese School
# (Independent)

**END-OF-YEAR EXAMINATION 2019**
**YEAR 3 INTEGRATED PROGRAMME**

**PHYSICS** **PAPER 1**
**MarkScheme**

**Monday** **7 October 2019** **1 hour 45 minutes**

**INSTRUCTIONS TO STUDENTS**

Write your index number in the box provided on the top right corner of this page.

**Do not open this booklet until you are told to do so.**

**Section A**
Answer **all** questions in the spaces provided in the paper.

**Section B**
Answer **all** questions in the spaces provided in the paper.

**INFORMATION FOR STUDENTS**
Candidates are reminded that all quantitative answers should include appropriate units.
Candidates are advised to show their answers in a clear and orderly manner as more marks are awarded for sound use of physics than for correct answers.

The number of marks is given in brackets [ ] at the end of each question or part question.
**Calculators are allowed for this paper.**
**Take g = 10 N/kg. There are 18 pages.**

| ***Marks Awarded*** | |
|---|---|
| **Section** | **Marks** |
| A | |
| B | |
| ***Penalty*** | |
| Sig. Fig. | |
| Units | |
| **TOTAL SCORE** | |

**2019 FYE P1**

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|---|---|---|---|---|---|---|---|---|---|
| A | A | D | A | C | C | B | C | D | D |

| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
|---|---|---|---|---|---|---|---|---|---|
| A | D | A | B | A | D | C | A | B | C |

| Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 |
|---|---|---|---|---|---|---|---|---|---|
| D | C | A | C | B | A | A | B | B | B |

| Q31 | Q32 | Q33 | Q34 | Q35 | Q36 | Q37 | Q38 | Q39 | Q40 |
|---|---|---|---|---|---|---|---|---|---|
| C | B | B | C | B | B | D | D | B | A |

Note

Q33:

Negative voltage implies then that Liquid B must be at a higher temp. than Liquid A. Hence option A and B are both as likely.

Next for a 30 degrees difference → 2 mV

This means that 1 mV corresponds to 15 degrees.

So the new temp will be 30 + 15 = 45 degrees.

Q34:

Energy supplied = Pt = 100 (1x60x60) = 360000 J (Using one hour time frame)

Q needed to raise temp in 1 hour = $mc\Delta\theta$ = 0.50(4200)(50) = 105000J

Hence energy loss in 1 hour = 255000J