

**Sets and Venn Diagram Past Paper Answers Edexcel Maths IGCSE**  
**Higher- Calculator**

1.

|                      |  |  |   |    |   |
|----------------------|--|--|---|----|---|
| (a) (i)              |  | Does not study Maths<br>No student studies (both) German <b>and</b> Maths<br>Students who study German do not study Maths<br>etc | 1 | B1 | Accept general answers (e.g. no student belongs in both sets).  |
| (ii)                 |  | (Preety) does not study French<br>(Preety) is not a member of (set) F  | 1 | B1 | Accept she /he in place of Preety or omission of name.<br>Penalise extra incorrect statements (e.g. Preety studies Maths and German but not French) |
| (b)                  |  | 1,2,3,4  | 2 | B2 | B1 for any 3 correct with no repetitions or additions.  |
| <b>Total 4 marks</b> |  |  |   |    |   |

2.

|                      |  |  |    |   |    |
|----------------------|--|--|----|---|----|
| 13. (i)              |  |  | 18 | 1 | B1 |
| 13. (ii)             |  |  | 15 | 1 | B1 |
| 15. (iii)            |  |  | 9  | 1 | B1 |
| 15. (iv)             |  |  | 22 | 1 | B1 |
| <b>Total 4 marks</b> |  |  |    |   |    |

3.

| Question             | Working | Answer | Mark | Notes                         |
|----------------------|---------|--------|------|-------------------------------|
| 5                    |         | 2 4    | 2    | B2 –withhold B1 mark for eooo |
| <b>Total 2 marks</b> |         |        |      |                               |

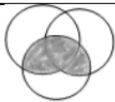
4.

|                      |  |              |   |    |  |
|----------------------|--|--------------|---|----|--|
| (a)                  |  |              | 1 | B1 | 6 and 11 in correct regions<br>Note: Award B0 for any numbers added to incorrect regions |
| (b)                  |  | {2, 5, 7, 8} | 1 | B1 | fit from Venn diagram<br>Ignore brackets and separators.                                 |
| (c)                  |  | {9, 12}      | 1 | B1 | fit from Venn diagram<br>Ignore brackets and separators.                                 |
| (d)                  |  | 6            | 1 | B1 | fit from Venn diagram  |
| <b>Total 4 marks</b> |  |              |   |    |  |

5.

|                      |  |                 |   |   |
|----------------------|--|-----------------|---|---|
| a                    |  | 1,2,3,4,5,6,7,9 | 1 | B1 no repeats   |
| b                    |  | eg. 4, 5, 7, 8  | 2 | B2 for 4, 5, and any two of 7, 8, 9, 10<br><br>If not B2 then B1 for 4,5 or<br>4,5 and any one or two other numbers from the universal set or<br>4, 5, 7, 8, 9, 10 or<br>7, 8, 9, 10 or<br>Venn diagram with 4,5 in intersection and any two correct numbers<br>(eg. 8,10) in C |
| <b>Total 3 marks</b> |  |                 |   |   |

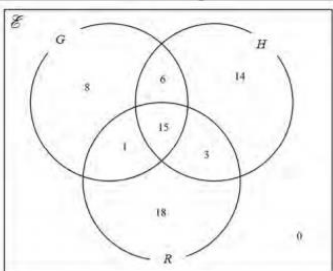
6.

|                      |                       |   |   |                        |
|----------------------|-----------------------|---|---|------------------------|
| (a)                  |                       | 12  | 1 | B1                     |
| (b)                  |                       | 7   | 1 | B1                     |
| (c)                  | Correct region shaded |  | 1 | B1 Must be unambiguous |
| <b>Total 3 marks</b> |                       |   |   |                        |

7.

|     |  |                                |   |   |
|-----|--|--------------------------------|---|---|
| (a) |  | 2, 3, 4, 6,<br>8, 9, 10,<br>12 | 1 | B1  |
| (b) |  | 5, 7, 11,<br>13                | 2 | B2 (B1 any set of 4 elements which satisfies exactly one of $A \cap C = \emptyset$ , $B \cap C = \emptyset$ or just 2 or 3 of 5, 7, 11, 13 or all four correct values and one incorrect value eg 1, 5, 7, 11, 13) |

8.

| Question | Working   | Answer               | Mark | Notes   |
|----------|---|----------------------|------|---|
| (a)      |  | Correct Venn diagram | 3    | M2 for at least 4 correct entries<br>If not M2 then<br>M1 for 2 or 3 correct entries<br><br>NB: For the award of the method marks do <b>not</b> accept a blank outside the circles as 0   |
| (b)      |   | $\frac{3}{18}$ oe    | 2    | A1 Accept omission of 0 for the award of full marks<br><br>M1 ft from Venn diagram<br>for $\frac{a}{"18"}$ where $a$ is an integer<br>and $1 \leq a < "18"$ or<br>for $\frac{"3"}{b}$ where $b$ is an integer and<br>$b > "3"$<br>A1 ft from Venn diagram |