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**ANNUAL NATIONAL ASSESSMENT**

**GRADE 9**

**MATHEMATICS**

**EXEMPLAR TEST 2012**

**MEMORUNDAM**

**ANNUAL NATIONAL ASSESSMENT 2012**

**GRADE 9 MATHEMATICS EXEMPLAR TEST**

**MEMORANDUM**

**QUESTION 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | 1.1 | **C** | 1.2 | **C** | 1.3 | **D** | 1.4 | **A** | 1.5 | **B** | Give 1 mark for each correct answer. | **[10]** |
| 1.6 | **D** | 1.7 | **B** | 1.8 | **C** | 1.9 | **A** | 1.10 | **A** |

**QUESTION 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2.1 | | **✓✓** | : 1 mark  : 1 mark | (2 ) |
| 2.2. | | **✓✓✓✓** | Substitution: 1 mark  Simplifying: 2 marks  Answer: 1 mark | (4) |
| 2.3 | | **✓✓✓** | : 1 mark  : 1 mark  :1 mark | (3) |
| 2.4.1 | | **✓✓** | : 1 mark  : 1 mark | (2 ) |
| 2.4.2 | | **✓✓** | Answer: 2 marks | (2 ) |
| 2.4.3 | | **✓✓**  **✓** | Simplifying: 2 marks  Answer: 1 mark | (3) |
| 2.4.4 | | = **✓✓**  = **✓**  = **✓**  = **✓** | Simplifying: 3 marks  Answer: 1 mark | (5 ) |
| 2.4.5 | | = **✓✓** | Simplifying: 1 mark  Answer: 1 mark | (2) |
| 2.4.6 | | **✓✓**  **✓** | Difference of two squares:  1 mark  Common factor: 1 mark  Answer: 1 mark | (3 ) |
| 2.5.1 | | **✓✓** | Common factor: 1 mark  Factor: 1 mark | (2 ) |
| 2.5.2 | | )**✓✓**  = **✓✓** | Common factor: 2 marks  Difference of two squares:  2 marks | (4 ) |
| 2.6.1 | | **✓**  **✓** | Simplifying:1 mark Answer: 1 mark | (2) |
| 2.6.2 | | **✓**  **✓**  **✓** | Multiplying by 2: 1 mark  Simplifying:1 mark Answer: 1 mark | (3 ) |
| 2.6.3 | | = **✓**  **✓**  **✓** | Applying exponential law: 2 marks Answer: 1 mark | (3 ) |
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**QUESTION 3**

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| 3.1 |  | Answer: 2 marks | (2) |

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| --- | --- | --- | --- | --- |
| 3.2 | Amount **✓✓**  **✓** | Calculation:2 marks  Answer: 1 mark | (3) |  |
| 3.3 | **✓**  **✓** **✓** or  **✓**  **✓**  1    **✓** | Formula: 1 mark  Substitution: 1mark  Answer: 1 mark | (3) |  |
| 3.4. | **✓**  = R13 310,00**✓** | Formula: 1 mark  Substitution: 1mark  Answer: 1 mark | (3) |  |
|  |  |  |  | **[11]** |

**QUESTION 4**

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| 4.1 | |  |  |  |  | | --- | --- | --- | --- | | 1 | 2 | 3 |  | | 6 | 9 | 12 |  |   15 matches **✓✓** | Answer: 2 marks | (2) |  |
| 4.2 | Tn = 3n + 3**✓✓** | 3n: 1 mark  3:1 mark  (1 mark per term) | (2) |  |
| 4.3 | **✓✓** | Substitution: 1 mark  Answer :1 mark | (2) |  |
|  |  |  |  | **[6]** |

**QUESTION 5**

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| --- | --- | --- | --- | --- |
| 5.1 | **✓** | Answer: 1 mark | (1) |  |
| 5.2 | **✓✓**  **✓✓** | : 1 mark  :1 mark  : 1 mark  :1 mark | (4) |  |
| 5.3 | AD || BC **✓**  (because the Gradient of AD = Gradient of BC)**✓** | AD || BC : 1 mark  Reason :1 mark | (2) |  |
|  |  |  |  | **[7]** |

**QUESTION 6**

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| 6.1 | In AEW :  110° (sum of s of = 180)**✓**  but(angles opp. equal sides of ) **✓**  = 55° (alt <s ; CS || HW)**✓** | Statement with reason: 1 mark  Statement with reason:1 mark  Statement with reason:1 mark | (3) |

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| 6.2.1 | In ∆ ABD and ∆ ACD  AB AC (given) **✓**  BD CD (given)**✓**  AD = AD ( common side)**✓**  ∆ ABD ≡ ∆ AC (s,s,s)**✓** | statement with reason: 1 mark  statement with reason: 1 mark  statement with reason: 1 mark  Correct case: 1 mark | (4) |

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| 6.2.2 | (corr<s of congruent s)**✓**  DA bisects BC**✓** | Correct statement with reason:1 mark  Conclusion:1 mark | (2) |

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| --- | --- | --- | --- |
| 6. 3 | (co-interior<e; AB || CD)**✓**  **✓**    (co-interior <e; AC || BD)**✓**  **✓** | Statement with reason: 1 mark  Statement with reason:1 mark  : 1 mark  1 mark | (4) |

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| 6. 4.1 | In PQR andSTR  (corr. <s; ST || PQ)**✓**  (corr. <s; ST || PQ)**✓**  (common )**✓**  PQRSTR ()**✓** | Correct statement with reason: 1 mark  Correct statement with reason: 1 mark  Correct statement with reason: 1 mark  Correct case: 1mark | (4) |  |
| 6.4.2 | 2 (prop. sides of sim s)**✓**  PQ **✓**  **✓** | Correct statement with reason: 1 mark  Substitution & calculation: 1 mark Answer: 1 mark | (3) |  |
|  |  |  |  | **[21]** |

**QUESTION 7**

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| 7.1 | **✓**  **✓**  **✓** | Formula/substitution: 1 mark  Calculation: 1 mark Answer: 1 mark | (3) |

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| 7.2 | Volume = 5000 | | Formula:1 mark  Substitution: 1 mark  Answer: 1 mark | (3) |  |
| 7.3.1 | **✓**  25 **✓**  & 25 **✓**  ABC is right-angled at | | Correct statement :  1 mark  Calculation: 2 marks  Conclusion:1 mark | (4) |  |
| 7.3.2 | S-area = 2 areaABC + (AB + AC + BC).h**✓✓**  + (12)(12) **✓**  = 12 + 144  **✓** | | Formula:2 marks  Substitution: 1 mark  Answer: 1 mark | (4) |  |
|  |  |  | | **[14]** | |

**QUESTION 8**

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| 8.1.1 | A(-2;2) **✓**  B (-5;-4)**✓**  C(1;-7)**✓**  D(4;-1)**✓** | Answer: 1 mark per pair of coordinates | (4) |

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| 8.1.2 | A'(0;0)**✓**  B'(-3;-6)**✓**  C'(3;-9)**✓**  D'(6;-3)**✓** | Answer: 1 mark per pair of coordinates | (4) |
| 8.1.3 | C''(1;7)**✓✓** | Answer: 2 marks | (2) |
| 8.1.4 | B''(5;-4)**✓✓** | Answer: 2 marks | (2) |

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|  |  |  | **[12]** |

**QUESTION 9**

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| 9.1. | |  |  |  | | --- | --- | --- | | Class-interval | Tally marks | Frequency | | 140-144 | ||||**✓** | 4**✓** | | 145-149 | |||**✓** | 3 **✓** | | 150-154 | |||| ||||**✓** | 9**✓** | | 155-159 | |||| |**✓** | 6**✓** | | 160-164 | |||| ||||**✓** | 10**✓** | | 165-169 | ||||**✓** | 5**✓** | | 170-174 | |||**✓** | 3**✓** | | For each correct interval: 2 marks | (14) |
| 9.2.1 | Range  **✓** | Answer:2 marks | (2) |
| 9.2.2 | **✓✓** | Answer: 2marks | (2) |
| 9.2.3 | Class-interval 155 - 159**✓✓** | Answer: 2marks | (2) |

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|  |  |  | **[20]** |

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| **TOTAL: [140]** |