**MALIET PP1 TERM 1 EXAM-2019**

121/1

MATHEMATICS

**PAPER 1 MARCH/APRIL 2019**

**MARKING SCHEME**

|  |  |  |  |
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| **1.** |  | .  M1  M1.  A1 | correct numerator  correct denominator  accuracy |
|  |  | **03** |  |
| **2** | 32(*x*2) = 33(2*x* + 12)  2*x*2 = 6*x* + 36  2*x*2 – 6*x* – 36 = 0  *x*2 – 3*x* – 18 = 0  (*x* + 3)(*x* – 6) = 0  *x* = -3 or 6 | M1  M1  M1  A1 | For correct powers  For correct equation  For correct factors  both |
|  |  | **03** |  |
| **3** | (a) Swiss Franc = 52/1.28  = 40.625    (b) Kenya shillings = 40.625 x 45.21  = 1837 | B1  M1  A1 |  |
|  |  | **03** |  |
| **4** | Let profit be P  P = 60,000  P = 60,000 x  = 20,000 x 19  380,000 | M1  M1  A1 |  |
|  |  | **03** |  |
| **5.** |  | M1  M1  A1 | for factorizing numerator  for denominator  for answer |
|  |  | **3 Marks** |  |
| **6** |  | M1  A1 |  |
|  |  | **02** |  |
| **7**. | 7y = 3x – 20  y = x -  g =  Gradient of tar =  (512) (x.y) =  =  3y – 6 = -7x + 35  3y = -7x + 41  y = x + | M1  M1  A1  3y + 7x = 41,  7x + 3y – 41 = 0 | rewriting in y = mx + C  or equivalent  or equivalent |
|  |  | **3 Marks** |  |
| **8** | (a) Sum of interior angles = number of triangles x 180  Let t be the number of  triangles  ⇒1080 = t x 180  t = 6  But t = n – 2 where n =  Number of sides  n = 6 + 2 = **8**  (b) The size by one interior angle =  =  Size of one interior angle  180 =  180 – 45  **= 1350** | M1  A1  M1  A1 |  |
|  |  | **04** |  |
| **9**. |  | B1  B1  B1 | or equivalent  or equivalent  or equivalent |
|  |  | **03** |  |
| **10** |  | B1  B1  B1 | For correct parallel lines  For hidden line  For correct figure  **NB** No extension of line BC on the paper. If so no award of marks |
|  |  | **03** |  |
| **11** | 4( 1)  (0.3485)3 - √437.6  (0.3485)3 = (3.485)3 x (10-1)3  = 42.33 x 10-3    √437.6 =√4.376 x 10-2  = √4.376 x 10-1  = 2.091 x 10-1 = 0.2091  0.0423 – 0.2091 = 0.1668  = -0.1668  4 ( -1 ) = 4( -1 x 10)  0.1668 1.668  = 4 x 5.995 = 23.9 | M1  M1  M1  A1 | For cube  For square root  For reciprocal and difference  For correct answer |
|  |  | **04** |  |
| **12** | Cos 620= 15/h  h=15/cos 62=31.951  Cos 30=JT/31.951  JT =31.951cos 30  JT=27.67  JP=27.67-15  =12.67M | M1  M1  A1 | For h  For correct substitution  For correct answer |
|  |  | **03** |  |
| 13. | HCF of 240, 320 and 380  120 320 380  2 120 160 190  2 60 80 95  5 12 16 19  HCF = 2 x 2 x 5 = 20 cm  Area = 202 = 400cm2 | M1  M1  A1 | alternative methods may be applied |
|  |  | **03** |  |
| **14** | v.s.f =  l.s.f =  asf =  area of large container =x9=56.25  height of larger container = 56.25xh= 540  h=  h=9.600 | M1  M1  M1  A1 |  |
|  |  | **04** | 4 sf 9.600 |
| **15** | Let the cost price (C.P) be Sh. x  Profit ⇒ Sh (420 – x)  Loss ⇒ Sh (x – 320)  Cost price = Sh. 345  420 – x = 3x – 960  -x – 3x = - 960 – 420  -4x = - 1380  4x = 1380  x =  = 345  Cost price = Sh. 345 | M1  M1  A1 | For both profit and loss  For forming the equation and solving it  For correct answer |
|  |  | **03** |  |

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| 16 | V=Base area × height  2.6X4.8 X 3.2 = 39.936m**3** | M1M1  M1A1 |  |

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|  |  | **04** |  |
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| 17 | **(b)(**i)029o±1o  (ii) 5.2km±0.1  (iii)5.5km±0.1  **(c)**CD=5.2km+  DA=3km  ADC=5.2+3=8.2  Total time =  Speed =  8.2+ | B1-A  B1-B  B1-C  B1-D  B1  B1  B1  M1  M1  A1 |  |
|  |  | **10** |  |

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| **18.** | **(a) <**TOU=180-(60+60)=**600(angle sum of a triangle=1800**  **(b)** <XUP= < RTU **=600(angle on a transversal are equal(alt)**  **(c)** <STR =<SUR=**250(angles subtended by same cord on circumference are equal )**  **(d)** Reflex<SXU=3600-950=**2650(angle at a point add upto 3600)**  **(e)** <RPU =1800-(600+900)=**300(angle sum of a triangle=1800** | B2  B2  B2  B2  B2 |  |
|  |  | **10** |  |

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| **19** | **(a)** x 30hr x40hr 60h = 2090  95h = 2090  **h = 22m/s**  max speed =  **= 79.2 km/h**  **(b)** a =  **=**  **(c)** x 20 x 11 =  **= 110m**  (d) Time for half journey  x 22 (30 + t + t) = x 2090  11 (30 + 2t) = 1045  330 + 22t = 1045  22t = 919  **t = 32.5** | M1  A1  B1  M1  A1  M1  A1  M1  M1  A1 | or 0.7333 m/s  accept km/h |
|  |  | **10 Marks** |  |

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| **20**. | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | X | -4 | -3 | -2 | -1 | 0 | 1 | 2 | | 2x2 |  | 18 |  |  |  |  | 8 | | 4x – 3 | -19 | -15 |  | -7 |  | 1 |  | | Y | 13 | 3 |  | -5 | -3 |  |  |   (b)    (c) x = -2.6 ± 0.1  Or x = 0.6 ± 0.1  (d)y = 2x2 + 4x – 3  o = 2x2 + x -5  y = 3x + 2  y = 3x + 2 drawn on the graph  X= 1.9 ± 0.1 or x = 1.4 ± | **B2**  **B1**  **S1**  **P1**  **C1**  **B1**  **B1**  **M1**  **L1**  **B1** | **For all values**  **For above 5 values** |
|  |  | **10** |  |

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| **21.** | (a) (i) OC = a  ~  ~  (ii) CB = CO + OB  ~  ~  ~  = - a + b  ~  ~  **= b - a**  ~  ~  b )(i) OE = OC + CE  ~  ~  = OC + MCB  ~  ~  = a + (OB – OC)m  ~  ~  ~  = a + mb - ma  ~  ~  ~  = a - ma + mb  ~  ~  ~  = (1 – m)a + mb  ~  ~  Also OE = OD + DE  = b + nDA  ~  ~  = b + n(OA – OD)  ~  ~  = b + n( a - b)  ~  ~  ~  = b - nb + na  ~  ~  ~  **= (1 – n)b + na**  ~  ~  (ii) (1 – m)a = (1 – n)b +na  ~  ~  ~  ⇒ (1 – m) = n  m =  ⇒ m = (1 – n)  = (1 – n)  = x 14 (1 – n)  7 (2 – 5n) = 6 (1 – n)  14 – 35n = 6 – 6n  - 35n + 6n = 6 – 14  n = =  m =  m =  (iii) OE = (1 – m)a + mb  ~  ~  = (1 - ) a + b  ~  ~  = x a + b  ~  ~  = **a + b**  ~  ~ | B1  M1  A1  B1  B1  M1  A1  M1  A1  A1 | for forming the equations  for value of n  for correct substitution  for value of m |
|  |  | **10** |  |

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| **22.** | 2.80cm  3.5cm  h  5cm  (a) Linear scale factor (L.S.F)  =  Area scale factor (A.S.F) ()2 =  Volume scale factor (V.S.F)  =  From similar triangles  =  5h = 5h + 20  h = 20cm  Length of larger cone  L2 = 252 + 3.52 = 625 + 12.25  L =  ∴ l = 25.24  Curved surface area larger cone  = x 3.5 x 25.24  = 277.64cm2  Curved S.A of the small cone  x 277.64 = 99.9cm2  Total surface area of frustrum  + + 99.95 cm2  24.64 + 38.5 + 99.95  = **163.09cm2**  (b) Volume of small cone  h = x x 2.8 x 2.8 x 20 = 164.3cm3 ­  Using volume scale factor (V.S.F)  Volume of larger cone  = x 164.3cm3  ∴Volume of frustrum  = x 164.3  x 164.3  **= 156.6cm3** | B1  B1  B1  M1  A1  B1  B1  M1  M1  A1 |  |
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|  |  | ***10 Marks*** |  |

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| **23** | (a)  D  D  33  E  E 40  F  H  B  B  42  C  36  D  C  A  21    25  25  20  40  5  5  G  *(b) Area A: ½ x 25 (33 + 21) = 675*  *Area B: ½ x 40 (21 x 42) = 1260*  *Area C: ½ x 30 x 42 = 630*  *Area D: ½ x 25 x 40 = 500*  *Area E: ½ x 5 (40 + 25) = 162.5*  *Area F: ½ X 60 (25 + 36) = 1830*  *Area G: ½ x 5 x 36 = 90 √*  *= 5,147.5m2* 10000  =0.515ha | B1  B1  B1  B1  B1  B1  B1  B1  M1  B1 | **For correct measurements(dimension**  **For parallel lines**  **For connection of points**  **For correct figure**  **For correct area A &B**  **For correct area C&D**  **For correct area E**  **For correct area F&G**  **For addition**  **For correct addition and conversion** |
|  |  | **10** |  |

