**MATHEMATICS**

**OPENER EXAMINATION TERM 3, 2022**

**FORM THREE MARKING SCHEME**

|  |  |  |
| --- | --- | --- |
| No | Working | Comments |
| 1 | ……(i)  …(ii)  ……(iii)  ……(iv)  ……(v)  Subtract eqn (ii) from (v) | M1  M1  A1 |
| 2 |  | M1  M1  A1 |
| 3 | Angle subtended by same chord | B1  B1 |
| 4 |  | M1  M1  A1 |
| 5 | L.S.F =  V.S.F =  Volume of bigger cone =  Volume of frustum = | M1  M1  A1 |
| 6 | % change = | M1  M1 A1 |
| 7 |  | M1  M1  M1 A1 |
| 8 |  | M1 A1 |
| 9 | Integral values are 0, 1 2, | B1  B1  B1 |
| 10 | … (i)  …(ii)  Eliminate *a*  Find *a* | M1  M1  A1 |
| 11 |  | M1  M1  A1 |
| 12 | 1. Area = | B1  M1 A1 |
| 13 | = 14400 | M1  M1  A1 |
| 14 | 1. Area = 2. Shortest distance = | M1 A1  M1 A1 |
| 15 |  | M1  M1  A1 |
| 16 | Cash price = Sh. 7 500 | M1  M1 A1 |
| 17 | (a)   1. Area = 2. S.A =   Volume =    (b)  CSA = | M1 A1  M1  A1  M1  A1  M1  M1  M1  A1 |
| 18 | 1. (i)     (ii)  A bag of sugar =Sh. 2000 and a bag of rice =Sh. 1500   1. Discount on bag of rice =   Total discount =  Discount on sugar = Sh.  Discount on 1 bag =  % discount = | M1 A1  B1  B1  M1  M1  A1 both values  M1  M1  A1 |
| 19 | a) Taxable income    b)  1st band =  2nd band =  3rd band  4th band =  5th band =  Gross tax =  Net tax paid = Sh.    c)  WCPS  Total deduction | M1  A1  M1  M1  M1  M1 A1  M1  M1 A1 |
| 20 | 1. (i) Distance between them at 10:45 a.m. =     Time taken =  Distance from Jane’s house =  (ii)  (iii)   1. Time taken = | M1  M1  M1  A1  M1 A1  M1 A1  M1  A1 |
| 21 | Radius BD =       1. Total length = | M1 A1  M1 M1  A1  M1 M1  A1  M1  A1 |
| 22 | 1. Managers annual salary = Sh. 54 000 2. Retained profit = 3. Ratio of contribution   Amount shared =   1. Meshack share =   Kelvin share =   1. Capital for the following yea | B1  M1 A1  M1  A1  M1  M1 A1  M1  A1 |
| 23 | 1. (i) Mid-point of AB =   (ii)  (iii)  At D, | M1  M1  A1  M1  M1  A1  B1  M1  M1  A1 |
| 24 | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | 0 | 1 | 2 | 3 | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |  | 12 | 9 | 6 | 3 | 0 |  |  |  | |  |  |  |  |  | 0 |  |  |  | |  |  |  | 5 | 8 | 7 | 2 |  |  |   (i)       |  |  |  |  | | --- | --- | --- | --- | |  |  |  | 2 | |  |  |  | 0 |   Values of *x*  are  (ii)        Values of *x* are |  |