**AA-14**

**FORM ONE MATHEMATICS**

**MARKING SCHEME**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | (a) (i) thousand. (ii) 3 x 1000 = 3000(b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 4 | 7 | 3 | 6 | 4 | 5 |
| Hundred Thousand | TenThousand  | Thousand | Hundred | Tens | ones |

 Four hundred and seventy three thousands, six hundred and forty five. | B 1B1B1B1 |  |
|  |  | 4mks |  |
| 2. | N 3 + 12 ÷ 4 x ~~7~~ 4 7 ~~7~~  3  3 + ~~12~~ x 3 4 7 ~~4~~ 3 + 9 = 21 + 36 4 4 28 = 57 28D 10 – 5 x 2 7 8 3 80 – 35 x 2  56 3   ~~45~~ X ~~2~~ = 15 ~~56~~ ~~3~~ 28 * 57 ÷ 15 = ~~57~~ X ~~28~~

28 28 ~~28~~ ~~15~~= 19 5= 4 5 | B1B1M1A1 |  |
|  |  | 4mks |  |
| 3 |  7b + 4p = 207 5b + 5p = 16535b + 20p = 103520b + 20p = 66015b = 375 b = 255p = 165 – 125  = 40 p = 8 |  B1M1M1A1 | One eq.Elimination for substitutionFor both values. |
|  |  | 4mks |  |
| 4 |  - 4 + 108 - 24 = 80 = 5 8 x 2 16  | B1B1B1 | BODMASSIMPLIFY 80/16 |
|  |  | 3mks |  |
| 5 |  Total amount = ( 50 x 80,000 ) + 120,000 = ( 4,000,000 + 120,000 = sh. 4,120,000Amount for each child = 4120000 – 520000 6 = sh. 600,000 | M1A1M1A1 |  |
|  |  | 4mks |  |
| 6. | 60 = 22 X 32 X 590 = 22 X 32 X 5180 = 22 X 3 x 5G.C.D = 2 x3 x5 = 30Greatest vessels = 30 litres. | B1M1B1 |  |
|  |  | 3mks |  |
| 7. |  L.C.M of 6 and 8 6 = 2 x 3 8 = 2 x 2 x 2 G.C.D = 2L.C.M = product of all factors G.C.D  = ( 2 X3 ) ( 2 X2 X 2 ) 2  = 3 X 8 = 24 Minutes  | M1A1 | Alternative

|  |  |  |
| --- | --- | --- |
| 2 | 6 | 8 |
| 2 | 3 | 4 |
| 2 | 3 | 2 |
| 3 | 3 | 1 |
|  | 1 | 1 |

LCM = 23x3 M1 = 24 minutes A1 |
|  |  | 2mks |  |
| 8. |  Let x = 0.1515… 100 x = 15.1515…. x = 0.1515 99x = 15 x= 15 99 = 5 33 | M1A1 |  |
|  |  | 2mks |  |
| 9 |  6 (x + 1) + 6 2x + 1 = 9 x 6 2 33 ( x + 1 ) + 2 ( 2x + 1 ) = 54 3x +3+ 4x + 2 = 54 7x = 54 – 5 7x = 49 x= 7 | B1M1M1A1  |  Multiply L.C.MCollecting like terms. |
|  |  | 4mks |  |
| 10 |   xo = ( 180o- 130o) = 50o alternate angles  yo = ( 130 – 70 ) 60o opposite interrior angles | B1B1 |  |
|  |  | 2mks |  |
| 11. |  Area of triangles = ½ X 6 X 12 X 2 = 72 cm2Area of rectangles = 8 x 12 x 2 = 192 cm2Area of a square (base) = 12 x 12 = 144S.A = 72 + 192 +144 = 408 cm2 | M1M1A1 |  |
|  |  | 3mks |  |
| 12. |  3 (2) + 2 ( 3) + 2 ( 22) – 6 (3) 4(2) – 2 ( 3) 6 + 6 +8 – 18 8 -6  = 1 | M1M1A1 |  |
|  |  | 3mks |  |
| 13. |  A:B A : B2(3:2) = (6 :4) B : C B: C1(4:1) (4 :5)A:B:C = 6:4:5 | M1A1 |  |
|  |  | 2mks |  |
| 14. |  Perimeter of semicicle + permieter of rectangular part 2 X 22 X 35 + 2 (100) 7 = 220m + 200m = 420mDistance covered = 25 x 420 = 10500m 1km = 1000m x = 10500m = 105~~00~~ 100~~00~~ = 10.5 km | M1M1A1B1 |  |
|  |  | 4mks |  |
| 15. | No. of use Dollars = 30,000 79 = $ 379.75 | M1A1 |  |
|  |  | 2mks |  |
| 16. | x + 24 = 4x – 30 3x = 54 x = 18 QP R = 42 PQR = 42 QP R = 84 | B1B1B1 |  |
|  |  | 3mks |  |
| 17 | a)b) PR = 10.8 ± 0.1  PQR = 109 ± 1oc) (i) QS = 3.5 ± 0.1 (ii) Area = ½ x 3.5 x 10.8  18.9 cm2 | B 1B1B1B1B1B1B1M1A1 |  |
|  |  | 10mks |  |
| 18.  | (a) (i) 5148 = 2 x 2 x 3 x 3 x 11x 13 = 22 x 32 x 11 x 13  (ii) 6084 = 2 x 2 x 3 x 3 x13 x 13 22 X 32 x 132(b) (i) (5148)2 6084 = (22 x 32 x 11 x 13)2 22 x 32 x 132 = 24 x 34 x112 x 132 2 x 3 x 13 = 23 x 32 x 112 x13 ii H.C.F = 22 X 32 X 13 L.C.M = 22 x 32 x 11 X 132 | M1 A 1M1M1M1A1B1B1 |  |
|  |  | 10mks |  |
| 19. |  a) (i) volume = 3.142 x 52 x 10m3 = 785.5 x 1000li = 785500litre (ii) Time taken to fill the tank = 785500 29 x 3600 = 7hrs 30min. Time the tank is full = 2030 + 7.30 = 2800 – 2400 = 4.00am b) No. of days = 785,500 250,000 = 3days | M1M1A1M1A1M1A1M1M1A1 |  for calculation |
|  |  | 10mks |  |
| 20 | 1. L of evaluent = 80o or 30o
2. 5.2 ± 0.1m

(b) Distence of Lorry = 7.5 ± 0.1 | B1B1B1B1B1 | For locating AFor locating BFor L 45 drawnLocations top |
|  |  |  |  |
| 21 | 1. Fraction for maize and beans = ½ + 1/5 = 7/10

Remainder = 1 – 7 = 3 10 10 Fraction for grazing = 1 of 3 = 1 3 10 10Remainder = 2 or 1 1. 5

Hence fraction for Hort. = 1 5Land fro grazing = 10 ha = 1 of whole land. 10 whole land is 10 x 10 = 100 haHence land used for horti = 1 x 100ha 5 = 20ha | B1B1M1A1 |  |
|  | 1. Total number of shares = 6

Wife’s share = 1 x 2,116,800 6 = sh. 352,800Son’s share = 3 x 2,116,800 6 = sh. 1058,000Son finally got. = 1058,000 + ½ of sh. 352,800 = 105800 + 176,400 = sh. 1,234,800 | M1A1M1A1M1A1 |  |
|  |  | 10mks |  |
| 22. | a) let selling price = 100 %Agent’s commision = 7 ½ %Owner eceived =100 – 7 ½ = 92 ½ % 92 ½ % = 222000 1% = 22200 ÷ 2 x 100 185Agent received = sh 240,000 | B1M1A1 |  |
|  | b) Rono received sh. 222000 incuring a loss of 25 % Rono received 75% of the price he had paid 75 % = 222,000/= 1% = 222,000 75  100% = 222,000 x 100 75 Rono paid = sh. 296,000 | M1A1 |  |
|  | c) Take price of new car = 100 % Rono paid ( 100-26) = 74 % of new 74 % = sh 296,000 1% = 296,000 74100 % = 296,000 x 100 74Price of new car = sh. 400,000b) Amount Rono received = sh 222,000 price of new car = sh. 400,000 required % age = 222 000 x 100 400000 = 55.5 % | B1M1M1M1A1 |  |
|  |  | 10mks |  |
| 23. |  2x – y = 3

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| x | -4 | -2 | 0 | 3 | 5 | 7 | 8 |
| Y |  | -7  | -3 | 3 |  | 11 | 13 |
| Points |  | (-2,-7) | (0,-3) | (3,3) |  | (7,11) | (8,13) |
| x | -2 | 0 | 2 | 4 | 6 | 8 | 10 |
| Y= 3x – 4 2 | -5 |  | 1 | 4 | 7 | 10 |  |
| Points | (-2,5) |  | (2,1) | (4,4) |  | (6,7) | (8,10) |

(e) ( 2,1)(d) P ( 1 ½ ,0) Q (0,-3) | B1B1B1B1B1 |  |
|  |  |  |  |
| 24  |  (i) 2325 – 2015 = 3hr 10mi 0640 – 0310 = 3hr 30mi 2100 – 0820 = 12hrs 40 mi 3415 – 22 55 = 11hr 20minTravelling time = 6hrs 40 + 24 = 30hrs 40 min(ii) 2710 – 23 25 = 3hr 45 min 0820 – 0640 = 1 hr 40min 2255 – 21000 = 1hrminStoppage time = 3hrs 45 + 3 hr 35m = 7hrs 20min(iii) time for whole journey 30 hrs 40min + 7hrs 20 min = 38hrsb) distance = 60 x 3 = 2280km. | M1M1A1M1M1A1M1A1M1A1 | Alter 3415 – 2015= 14hrsPlus 24hrs 38hrs |