**MWAKICAN JOINT EXAM**

**MARKING SCHEME**

**FORM 1 MATHEMATICS**

**END OF TERM 1 2014**

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Working | Marks |  |
| 1. | 1044 + 1006×180  1006×180=181080  1044+181080= 182,124 | M1  M1, Ans 1 | Long method only |
| 2. | Let the number be x  LCM=product of the number  GCD of the number  140 = 20×x  20  X = 140×7  20  X = 49 | M1  M1  A1 | Mark alternative method. |
| 3. | X2 + x = x(x+1)  X2-1= (x+1) (x-1)  X2-x =x(x-1)  X(x+1) (x-1)  X3-x | M1  M1  A1 |  |
| 4. | -4+108-24  56÷7×2  -4+108-24  16  80/16 = 5 | M1  M1  A1 | Numerator  Denominator  Accuracy |
| 5. | 3/8 ( 38/5 - 55/36 × 12/5)  3/8 × 59/40 = 119/40 | M1  M1, A1 |  |
| 6. | 8+(-4) + -22  -24 33  4/-24 – 22/33 = -1/6 – 2/3  -3 – 12 = -15/18 =-5/8  18 | M1  M1  M1  A1 |  |
| 7. | L.C.M of 30, 36, and 45   |  |  |  |  | | --- | --- | --- | --- | |  | 30 | 36 | 45 | | 2 | 15 | 18 | 45 | | 2 | 15 | 9 | 45 | | 3 | 5 | 3 | 15 | | 3 | 5 | 1 | 5 | | 5 | 1 | 1 | 1 |   L.C.M = 22×32×5 = 180  M=180+7=187 | M 1  M 1  A 1 |  |
| 8. | 36, 192, 120, 744, and 9564 | 3mks  1 mk  0 mk | All listed  When 2 numbers wrong  More than 2 numbers wrong |
| 9. | 8+6+4+9=27  2+0+x  27-(2+x)=11  27-2-x=11  X=27-2-11  X=27-13=14  14 can not be the answer,  27-(2+x)= 22  27-2-x=22  X=27-2-22  X=27-24  X=3 | M 1  M 1  A 1 | But only one digit needed |
| 10. | 4×(-2)×(-6)  4  =12 | M 1  A  1 |  |
| 11. | -2  -9-8-7-6-5-4-3-2-10  +6  (-7) + (-2) +(+6) = =-3 |  |  |
| 12. | R=3.256  10r=32.5656….  1000r=3256.565656…..  990r=3256.5656….   * 32.5656….   3224.0000….  R=3224/990 | M 1  M 1  A 1 |  |
| 13. | 9/5 × 33/4 = 297/20  297/20 – 5  = 1417/20 - 5  = 917/20 | M 1  M 1  A 1 |  |
| 14 | 10/21 + (-1/18) ÷ 7/18  10/21 + (-1/18 ×18/7)  = 10/21 – 1/7  10/21 – 3/21  = 7/21 = 1/3 | M 1  M 1  A 1 |  |
| 15. | 2km  1/3×2  = 2/3  Distance from k= 2-2/3  = 11/3 | M 1  M 1  A 1 |  |
| 16. | L.C.M of 60 and 42   |  |  |  | | --- | --- | --- | |  | 60 | 42 | | 2 | 30 | 21 | | 2 | 15 | 21 | | 3 | 5 | 7 | | 5 | 1 | 7 | | 7 | 1 | 1 |   L.C.M = 22×3×5×7  =420  Area = 4.2×4.2  =17.64M2 | M 1  M 1  A 1 |  |
| 17. | a) Let his salary be sh. X    School fees 1/4x  Remaining 3/4x  Electricity and water bills 1/4x × 3/4x  = 3/16x  Remaining 3/4x – 3/16x  =9/16x  Transport 1/9×9/16x  = 1/16x  Remaining = 9/16x – 1/16x  = 8/16x = 1/2x  1/2x=3,400  X = 3,400×2  =6,800 | M 1  M 1  M 1  M 1  A 1 |  |
|  | b) School fees = 1/4×6,800  =sh. 1,700 | A 1 |  |
|  | c) Transport = 1/16x x  1/16×6,800  Sh. 425 | A 2 |  |
|  | d) Electricity and water bills  3/16x = 3/16×6,800  Sh. 1,275 | A 2 |  |
| 18 | Let B be the beginning and E stand for end of the  B 23p 20p 26  1st 2nd E stop stop  1st 23-23 = 11  9+11= 20  2nd stop 9-6= 3 20-6= 14  Final destination 14 + 12= 26 Passangers | M 1  M 1  A 1 |  |
|  | b) 23+9+12  =44 Passangers | M 1  A 1 |  |
|  | c)12×50 = sh. 600  11×85= sh.935  6×20 = sh.120  3×35 = sh.105  12×15 = sh. 180  Sh. 1,940 | M 1  M 2  A 1 |  |
| 19. | a) i) 2+6-\*=0 \*=8  ii)8+7-\*+1 = 11  14-\* = 11 \*=14-11= 3  iii) 8+9+9-\*+1 = 22  26-\*-1 = 22 \*= 25-22 = 3 | M 1  M 1  A 1 |  |
|  | b) i) 3+9+6+\*+5  23+\* sum divisible by 9  23+\* = 27 \* = 27-23 = 4  ii)4+8+6+7+5+\*  30+\* = 36  \*36-30 = 6    iii)3+4+9+\*+\*  16+\*+\* = 18  \*+\* = 18-16 =2  \* \*  2 0  0 2 MaRK FOR OTHERS THAT ARE CORRECT | M 1  A 1 |  |
| C) | i) 3+\*+7 = 12  \*= 2  ii) \* 1  iii) \* 0 Mark for other values that are correct | M 1  A 1 |  |
| d) | i) \*= 2  ii) \* =3 NB: There could be other numbers  iii \* = 0 | M 1  A 1 |  |
| 20. | L.C.M of 324 and 220  a)   |  |  |  | | --- | --- | --- | |  | 324 | 220 | | 2 | 162 | 110 | | 2 | 81 | 55 | | 3 | 27 | 55 | | 3 | 9 | 55 | | 3 | 3 | 55 | | 3 | 1 | 55 | | 5 | 1 | 11 | | 11 | 1 | 1 |   LCM = 22×34×5×11  = 17, 820 | M 1  A 1 |  |
|  | b) i) son 17820/324  = 55 items  ii) daughter 17820/220  = 81 items | A 2  A 2 |  |
| 21. | 2010 = 750 =100%  2011 (100-30)% of 750 bags-B 1  70/100×750  =525 Bags- B 1  2012 115/100×525  603.75 Bags- Bags  2010 750 × 55= 41250kg  1 ton= 1000kg  41250kg  41250/1000  = 41.25 tonnes – M 1  1 tonne = 7900  41.25 tonne = ?  7900×41.25 = sh. 325875 – B 1  2011 525×55 × 110/100×7900  1000  = sh. 250923.75 – M 1  2012 603.75/1000×55 B 1  110/100×8690 = sh. 317418  Total 325875.00 M 1  250923.75  317418.54  894217.29 A 1 |  |  |
| 22. | a) x = GCD ×LCM  # given  = 26×1092  182  = 156  Or: GCD = 26 =2×13  LCM =1096 = 22×3×7×13  182= 2×7×13  Comparing factors of GCD and LCM and 182  X= 22×3×13 = 156  NB: For LCM; Common factors with lowest power  GCD common factors with lowest power | M 1  A 2 |  |
|  | b) Muigai = sh p  Nzau = sh 4p  Muli = sh. 2p   1. Total = p+4p+2p = 7p 2. P= sh 1500   Muigai 1500  Nzau 6000  Muli 3000  total Sh. 10500 | M 1  M 1  M1  A 1 |  |
|  | c) w = 35° - vertically opposite angles are equal  x= 35° - corresponding angles  y= (180-35)°  = 145° Supplementally angles  Z = 145° Corresponding angles sum is equal to 180° | A 1  A 1  A 1  A 1 |  |
| 23. | a) 2340 + 3455 + 675 + 960 + 1350  = 8780 | A 2 |  |
|  | b) i) lost job  2340/5 + 3455/5  468 + 691  = 1159 | M 1  M 1  A 1 |  |
|  | 1. Got jobs   675/3 + 960/3 + 1350/3  225 + 320 450  = 995 ×2  =1990 | M 1  M 1  A 1 |  |
|  | c) 8780 + 1990 – 1159  = 9,611 | M 1  A 1 |  |
| 24. | a)   |  |  |  | | --- | --- | --- | | Mass | Frequency | fx | | 90 | 2 | 180 | | 91 | 1 | 91 | | 94 | 3 | 282 | | 96 | 2 | 192 | | 98 | 2 | 196 | | 99 | 4 | 396 | | 102 | 3 | 306 | | 105 | 3 | 315 |   20 1958   1. Mode=94 Number repeated   many times   1. Mean 1958/20 2. =97.9 | A 1  A 1  A 1 |  |
|  | b) Thusday bought = 1948  Sold = 750  Balance = 1,198  Friday; sold 240 + 750 = 990  Balance = 1,198-990  = 208  Saturday; Bought 560  Total on sat 560 + 208 =768  Money = 768 ×8 = Ksh. 6144 | M 1  M 1  M 1  M 1  A 1 |  |