**MIDTERM ONE FORM FOUR**

**MATHS**

**MARKING SCHEME**

|  |  |  |  |
| --- | --- | --- | --- |
|  | No Log  34.33 1.5357  5.25 0.7202  0.042 .6232  .3434  + 1.3434  2  .6717  1.5357  .6717  1.8640 anti log 7.311 X 101  = 73.11 | M1  M1  M1  A1 | All logs  Addition & sub  Division by 2  C.A.O |
|  |  | 4 |  |
|  | * 1. /100 x 100000 = 2,500/=   1.6/100 x 220,000= 3,520/=  Total Comm. = 2,500 + 3520  = 6,020/= | M1  M1  A1 |  |
|  |  | 3 |  |
|  | W2 = p2 Q2  P2 – Q  W2 = p2 - P2 – Q = W2  Q  p2 (W2  - Q) = W2Q  (W2- Q) W2– Q  P = ± | M1  M1  A1 |  |
|  |  | 3 |  |
|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 6 | 7 | 8 | 9 | 10 | 11 | 12 |   P( 7 OR >) 21/36 = 7/12 |  |  |
|  |  |  |  |
|  | in 1 day ,B+B does 1/6 of the work  in 4 days, they do 1/6 x 4 = 2/3 of the work.  In one day, BOnface does 1/10 of the work  In one day brian does ( 1/6 – 1/10) = 1/15 of the work.  If 1/15 afterwork’s done by brian in 1 day  Then 1/3 will be done in ½ x 1 ÷ 1/15  = 5 days to complete | M1  M1  A1 | Work done by both in 4 day |
|  |  | 3 |  |
|  | M = KN + h  25k + 5h = 500  16k + 4h = 800  100k+ 20h = 2000  80k + 20h = 4000  20k = - 2000  k = -100  sh = 00 + 2500  sh = 3000  h = 600  ∴ M = 600 - 100N | B1  M1  A1  B1 | For two equs  Attempt to solve equations  Boths values for variables correct  Equation connecting m and N |
|  |  |  |  |
|  | Log 0.045 = log  = log  = 2 log 3 + log 5 – log 1000  2 x 0.4771 + 0.6990 – 3  = -1. 3468  = .6532 |  |  |
|  |  | 3 |  |
|  | A = PC ( 1 = r /100)  6272 = 5600 ( 1 = r /100)1  1.12 = 1 = r /100  r /100 = 0.12  r = 12%  P ( 1 = 12 /100)1 = 5600  P = 5600  1.12  P= 5000 | M1  A1  M1  A1 | Correct subst  Correct subst. |
| 9. |  | 4 |  |
|  |  | M1  A1 |  |
|  |  | 2 |  |
|  | 1 8 28 56 70  (3x)8 (3x)7 (3x)6 (3x)5 (3x)4  1 ( -1/x) 1 ( -1/2x)2 ( -1/2x)3 ( -1/2x)4  constan = 70 x 81x4x 1/16x4  = 35.4 375 or 2835  8 | M1  M1  A1 |  |
|  |  | 3 |  |
|  | Distance = area under the curve  = ( ½ x 2 ( 20+30) + 5 x 30 = ½ x 3 x 30) mm  = 100 + 150 + 45  = 295m | B1  M1  A1 |  |
|  |  | 3 |  |
|  | ∠ ABD = 360o ( angle formed by a tangent in the opp. Segment).  ∠ BDA = 127 ( angle in a Δ)  ∴∠ BDC = 180 – 127 = 53o  Or ∠ BDC = 17 + 36 ( exterior angel = opp.inter) | B1  M1  A1 | Getting ∠ ABD |
|  |  | 3 |  |
|  | x(x+2) + 2(x+2)  x + 2  = x + 2  dy = 1  dx | M1  A1  B1 | Factorization attempt |
|  |  | 3 |  |
|  | 21m 59m    40m  59 2 = 21 2 + 402 – 2 x 2 1 x 40 cos  Cos  = 592 – 212 – 402  -2 x 21 x 40  = 1440  -1680  = -0.8571 42857  = 148.9972809o  = 149o | M1  M1  A1 |  |
|  |  | 3 |  |
|  | 2 2x+ 3 – 9 (2x) + 1 = 0  Let 2x be y  8y2 – 9y + 1 = 0  Y = 9 ±  16  = 9 ± 7 = 1 or 1/8  16  2x = 2o = x = 0  Or 2x = 2 -3 = x = -3 |  |  |
|  |  | 3 |  |
|  | 20,000+ 22000+ 24,200 +………..  a = 20,000  r = 22000 = 24200 = 1.1  2000 22000  7th term = 20,000 (1.1)6  = 35,431.20 | B1  M1  A1 | For a or r  Correct subt. |
|  |  | 3 |  |
|  |  | 10 |  |
|  |  | 10 |  |
| 18 | 1. Longitifunal difference = 114 + 66 = 180o 2. 180 x 2 x 22/7 x 6370cos 52 3. 360   = 12325.5km   1. 76 x 2 22/7 x 6370   360  = 8452.89 km  c) dist = 8452.89km  Speed = 800 km/hr  Time 8452.89 = 10.57hrs  800  = hrs 34min 2 sec  Time of arrival = 10.00am + 10.34  2034  Or 8.34 pm |  |  |
|  |  | 10 |  |
|  |  |  |  |
|  |  |  |  |
| 19. | 1. S = t3 – 6t +9t+ 5   ds = 3t2 – 12t + 9  dt  at t = ½  ds = 3 ( ¼ ) – 12 ( ½ ) + 9  dt  = ¾ - 6 + 9  = 3 ¾   1. ds = 0 = 3t2 – 12t + 9   dt  t2 – 4t + 3 = 0  t = 3 or t = 1  at t = 3  s = 27 – 54 + 27 + 5  = 5 metres  at t = 3  s = 1 – 6 + + 5  = 9 meters   1. points on curve   t = 0, s = 5 ( 0,5) 0 1 2  t = 1, s = 9 ( 1,9) maximum ds/dt +ve 0 -ve  t = 3,s = 5 ( 3, 5 ) min 2 3 4  ds/dt -ve 0 - ve |  |  |
|  |  |  |  |

21..

