

# OUR OWN HIGH SCHOOL, Al WARQA’A, DUBAI

# MATHS WORKSHOP 2017

**PRACTICE PAPER - ANSWERS**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: 10 Sec:**

# Subject: MATHEMATICS M. Marks: 80

**Date: 10.1.2018 Time: 3 hours**

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**Section A**

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| 1. | Remainder = 5 |  |
| 2. | k = 5 |  |
| 3. | n = 35 |  |
| 4. | Distance AB = a |  |
| 5. | EF = 5.4 cm |  |
| 6. | θ = 600 |  |
| |  |  |  | | --- | --- | --- | |  | **SECTION B** |  | | 7. | m = 4, 5 or 8 |  | | 8. | Common difference = 2ab. Hence, they are in AP. |  | | 9. | x – y = b – a |  | | 10. | Any point on the perpendicular bisector of a segment is equidistant from the two given points.  PA = PB PA2 = PB2 (0 – 1)2 + (y – 5)2 = (0 – 4)2 + (y – 6)2  y = 13 Hence point is P(0,13) | | |  | | 11. | P(xy is more than 16) = 6/16 = 3/8 |  | | |
| |  |  |  | | --- | --- | --- | | 12. | P(she loses the entry fee) = 1/8  P(just gets her entry fee) = 7/8  **SECTION C** |  | | 13. | Any positive odd integer can be written as a = 6q +1, a = 6q + 3 and a = 6q + 5  a2 = (6q + 1)2 = 36q2 + 12q + 1 = 6(6q2 + 2q) + 1 = 6m + 1  a2 = (6q + 3)2 = 36q2 + 36q + 9 = 36q2 + 36q + 6 + 3 = 6(6q2 + 6q + 1) + 3 = 6m + 3  a2 = (6q + 5)2 = 36q2 + 60q + 25 = 36q2 + 60q + 24 + 1 = 6(6q2 + 10q + 4) + 1 = 6m + 1 |  | | 14. | Two of the zeroes are: 2 +  and 2 –.  g(x) = x2 – 4x + 1  On dividing , we get q(x) = x2 – 2x – 35 Hence the other two zeroes are: 7 , –5 |  | | 15. | Let the required number be 10x + y  10x + y = 6(x + y) +4 **4x – 5y = 4…………..(i)**  10x + y – 18 = 10y + x **x – y = 2………………(ii)**  Solving (i) & (ii), we get x = 6, y = 4 Hence the number =64 |  | | 16. | **OR**  Let B(2, p) divides segment joining A(–1, –1) and C(8, 11) in the ratio k : 1  (2, p) =  Solving, we get k = ½ ratio = 1 : 2 and p = 3 |  | | 17. |  |  |   **OR** | |
| |  |  |  | | --- | --- | --- | |  |  |  | | 18. |  |  | | 19. | 2/3  **OR**  L H S = sec2 θ –  = sec2 θ –  = sec2 θ – tan2 θ = 1 |  | | 20. |  |  | | 21. | **OR** |  | | 22. | 36 = 30 +  Hence, Mode = 10 |  | | |
| **Section D** | |
| |  |  |  | | --- | --- | --- | | 23. | **OR**  x2 + 24 = (x + 1)2 – 25 Solving, we get x = 24 |  | | 24. |  |  | | 25. | Theorem |  | | 26.  27. | Construction |  | | 28. | A  tan θ =  tan φ =  tan φ =   =  h = 3x/4  tan θ =  =  D θ φ  x = 300, height = 225 m C B |  | | 29. | Cylinder: r = 15 m, h = 5.5 m  Cone: r = 15 m, h = 8.25 – 5.5 = 2.75 m  Slant height l2 = r2 + h2 = 152 + (2.75)2 = 7.5625 + 225 = 232.5625 l = 15.25 m  Area of canvass = 2πrh + πrl = πr(2h + l) = 22/7 x 15(2x5.5 + 15.25) = 1237.5 m2  Length of canvass = 1237.5 ÷ 1.5 = 825 m |  | | |
| |  |  |  | | --- | --- | --- | | 30. |  |  | |  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Class intervals | 140 - 150 | 150 - 160 | 160 - 170 | 170 - 180 | 180 - 190 | 190 – 200 | | xi | 145 | 155 | 165 | 175 | 185 | 195 | | fi | 7 | f1 | 20 | f2 | 6 | 2 | | ui | -2 | -1 | 0 | 1 | 2 | 3 | | fi ui | -14 | - f1 | 0 | f2 | 12 | 6 | |  | |  |  |  | |  | Σ fi = 35 + f1 + f2 = 52 f1 + f2 = 17……………………….(i)  Σ fi ui = 4 - f1 + f2  Mean =  = a + |  | |  | 166 = 165 + |  | |  |  |  | | |
| 1 =  f1 – f2 = – 3………………(ii)  Solving (i) & (ii), we get, **f1 = 7, f2 = 10**  \*\*\*\*\*\*\*\*\* | |
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