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| **FT/MAAK/1119B 29/08/2019** | |
| **CLEARANCE EXAMINATION (2019-20)** | |
| **SUBJECT: MATHEMATICS (ANSWER KEY)**  **GRADE: XI** | MAX. MARKS: 80TIME: 3 Hrs |

**SECTION A**

1. { x : x2 – 1 = 0}
2. T = {10}
3. -3 + 4i
4. x = 3, y = -1
5. 212
6. 1
7. 6.28cm
8. (-4,2)
9. x = 3, (-3,0)
10. A’ (B C) or (B C) – A
11. {}{4}{{5,6}}{7}{4{5,6}}{4,7}{7{5,6}}{4{5,6},7}
12. x = 5, y = ±2
13. D = {1, 2, 3, 4, 5, 6} Range = {5, 6, 7, 8, 9, 10}
14. Proper definition
15. -
16. 3430 38’ 11’
17. Cosx
18. Transverse axis 8 units conjugate axis 6 units

**SECTION B**

1. = a , a = b

= b …………………………1M

……………………..1M

1. 2m = 2n + 112

2m – 2n = 24 x 7 …………………..1M

2n (2m-n – 1) = 24 x 7

n = 4

m = 7 ………………..1M

1. = 2+I ………………1 and 1/2M

………………..1/2M

1. let f(x) = ax + b

(0, -1) f -1 = b ………………………1M

(1, 1) f 1 = a + b

a = 2

f(x) = 2x – 1 ……………………1M

1. 3 x x 2 – 4sin(π - ) ……………………1M

3 - x

3 -

3 - ………………………..1M

1. Tan (45 +30) = ……………………………..1M

…………………………1M

**SECTION C**

1. Center (-1, -2)

Radius = 4 ……………………………………..2M

Eq (x + 1)2  + (y + 2)2 = 16

x2 + y2 + 2x + 4y = 11 ……………………………………..2M

1. Venn diagram ……………………………2Marks each
2. u3 – 3uv2 + i(3u2v – v3) = x + iy

u(u2 – 3v2) = x

u2 + 3v2 = …………eq 1 …………………………………2m

v(3u2 – v2) = y

3u2 – v2 = y/v ………..eq 2 …………………………………1m

On adding 1 and 2

4(u2 – v2) …………………………………1M

1. (i) domain = [-4, 4]

Range = [0, 4]

(ii) Domain = R

Range = [0, 1) Each 1Mark

1. Tan2(2x) = ………………………1M

……………………..3M

1. 2a = 8

a = 4

b = 2 …………1M

(2.5, h) lies on 1 ………………1M

1

H = 1.56m(app) ………………………….2M

**SECTION D**

1. (-4, 0) and (4, 0) lies on the circle, radius = 5 …………………………….1M

Let center (h, k)

(4 - h)2 + k2 = 25 ………………………………1M

(-4 - h)2 + k2 = 25 ……………………………………….1M

On solving both the equations

h = 0, k = ±3 …………………………………………..1M

equations are x2 + y2 - 6y = 16 and x2 + y2 + 6y = 16 …………………………………2M

1. b2 – 4ac = 7 – 24i ……………………………1M

………………………..4M

x = 3 – i, -1 + 2i ………………………1M

1. (i) (cos2x + cos6x)(cos2x – cos6x) …………………………1/2M

(2cos4xcos2x)(2sin4xsin2x) ……………………..1 and 1/2M

Sin8xsin4x …………………..1M

(ii) = ……………………..1 and 1/2M

= = tanx ……………………..1 and 1/2M

1. Venn diagram – 3marks
2. 5
3. 1
4. 11
5. 23
6. 2
7. 12 …………………………1/2Mark each.

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