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| **PT1/MAQP/1123/B 22-MAY-2023**  **PERIODIC TEST - I (2023-24)** | | | |
| **Subject: MATHEMATICS**  **Grade: 11** | | **Max. Marks: 35**  **Time: 1hr 15mins** | |
| ***General Instructions:***   * *Section A carries one mark each* * *Section B carries two marks each* * *Section C carries three marks each* * *Section D carries four marks each* * *Section E carries five mark.* | | | |
| **SECTION -A** (1 mark each) | | | |
| 1. | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  | | --- | --- | --- | --- | | The range of the function f(x)= is: | | | | | **a.** |  | **b.** |  | | **c.** |  | **d.** | None of these | | | | |
| 2. | |  |  |  |  | | --- | --- | --- | --- | | If tan A =​ and tan B=​, then the value of tan(A+B) is: | | | | | **a.** |  | **b.** |  | | **c.** | 0 | **d.** |  | | | |
| 3. | |  |  |  |  | | --- | --- | --- | --- | | In a circle, the central angle of 450 intercepts an arc of length 33cm.The radius of the circle is: | | | | | **a.** | 21cm | **b.** | 35cm | | **c.** | 42cm | **d.** | 14cm | | | |
| 4. | |  |  |  |  | | --- | --- | --- | --- | | If AB = B then | | | | | **a.** | B A | **b.** | A = | | **c.** | A B | **d.** | B = | | | |
|  | **SECTION B (2marks)** | | |
| 5 | If S = { x: x is a positive multiple of 3 less than 100 } and  P = { x: x is a prime number less than 20}, then write n(S) + n(P). | | |
| 6. | Find the value of Sin() | | |
| 7. | Draw the graph of the modulus function and give its equation. | | |
|  | **SECTION C (3marks)** | | |
| 8. | U={x: x A = { x:x is a prime number B = { x:x=3n, n  C = {x: x=3n, n  Find the following (a) (AUB)1 (b) (A ( c) ( A-B) | | |
| 9. | If A ={ 2,4,6,9} B = { 4,6,18,27,54} and a relation R from A to B is defined as  R ={ (a,b); a ,b , a is a factor of b and a < b}then  (i).Find R in roster form.  (ii)Find its domain and range | |  |
| 10. | Find the value of tan150. | |  |
| 11. | Prove that: | |  |
| **SECTION D (4marks)** | | |  |
| 12. | In a survey of 60 people, it was found that 25 people read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I, 3 read all three newspapers.  Find: (i) the number of people who read at least one of the newspapers.  (ii) the number of people who read exactly one newspaper | |  |
| 13 | Find the domain and range of the following functions: | |  |
|  | **SECTION E (5marks)** | |  |
| 14. | Prove that :cosec2 cos2 =  ii) Prove that: | |  |
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