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| **PT1/MA/1119A 26/05/2019** | | | | |
| **PERIODIC TEST I (2019-20)** | | | | |
| **Subject: MATHEMATICS**  **Grade: XI** | | Max. Marks: 30Time: 1 Hr 10 Mins | | |
| **Name:** | | | **Section:** | **Roll No:** |
| ***General Instructions:***   * *This question paper consists of 2 printed pages.* * *Section A carries 1 mark each.* * *Section B carries 2 marks each.* * *Section C carries 4 marks each.* * *Section D carries 6 marks each.* * *All answers to be written in the answer sheet provided.* | | | | |
|  | **SECTION A** | | | |
|  | If U = {x : x ≤ 10, xN}, A = {x : xN, x is prime}, B = {x : xN, x is even} write A B’ | | | |
|  | Write P(A), if A = {1, 2, 3} | | | |
|  | Express in the form a + ib 2i109 + i100 – i17 + 5i3 | | | |
|  | Find the eccentricity of the ellipse if its latus rectum is equal to one half of its minor axis. | | | |
|  | In a group of 40 students, 26 take tea, 18 take coffee and 8 take neither of the two. How many take tea only? | | | |
|  | Find vertices and foci of hyperbola  9x2 – 16y2 = 144 | | | |
|  | Write the following set in the roster form  A = {x : x is a positive integer less than 10 and 2x – 1 is an odd number} | | | |
|  | If parabola y2 = 4ax passes through (3, 4), find the value of a | | | |
|  | **SECTION B** | | | |
|  | Determine the equation of the circle if (3, 2) and (-1, 6) are the end points of the diameter of the circle. | | | |
| 10. | A and B are two sets such that n(A-B) = 14 + x , n(B – A) = 3x and n(AB) = x. If n(A) = n(B) then find the value of x | | | |
|  | **SECTION C** | | | |
| 11. | In a survey of 50 students, it was found that 25 students stick to internet, 26 remain busy with mobile and 26 read books. If 9 students are busy in both internet and mobile, 11 use mobile and read books, 8 are busy in internet and books. 3 are busy with all three.   1. Find the number of students who use at least one of the mode to remain busy. 2. Number of students who use exactly one of the mode. 3. Number of students using internet but not books.   (iv) Number of students using books but not internet and mobile. | | | |
| 12. | Convert the following complex number into polar form | | | |
| 13. | Find the equation of a circle which passes through the centre of x2 + y2 + 8x + 10y – 7 and concentric with the circle 2x2 + 2y2 – 8x – 12y – 9 = 0 | | | |
|  | **SECTION D** | | | |
| 14. | Solve the following quadratic equation  x2 – (3 – 2i) x - 6= 0 | | | |
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