**Sample Paper UGAT Subject (Mathematics)**

**Section I, Subject**

**1).** The inequality $-\infty <x\leq 12$ can be written in term of interval as

|  |  |  |  |
| --- | --- | --- | --- |
| 1. $[-12,12)$
 | 1. $(-\infty ,12)$
 | 1. $(-\infty ,12]$
 | 1. None
 |

**2).** The slope of a line which is parallel to $\frac{5x}{2}+y=-\frac{8}{7}$ is

|  |  |  |  |
| --- | --- | --- | --- |
| 1.
 | 1.
 | 1.
 | 1.
 |

**3).** If the function $y=3x^{2}+1$ satisfies all conditions of Rolle’s theorem in interval $[-1,1]$, then c=

|  |  |  |  |
| --- | --- | --- | --- |
| 1.
 | 1.
 | 1.
 | 1.
 |

**4.)**The area bounded by the parabola $y=x^{2}$and the line $y=2x+3$ is

(a) 32 (b) $\frac{32}{3}$ (c) $\frac{3}{32}$ (d) $0$

**5).** If  is a group such that  , then  is a/an

* + 1. Commutative semi group
		2. Abelian group
		3. Non-abelian group
		4. None of these

**6).** If  is a group such that , then  is

a) Semi group

b) Abelian group

c) Non-abelian group

d) None of these

**7).** The set  is an abelian group under

a) subtraction

b) division

c) multiplication

d) addition

**8).** If and , then

(a). 

(b). 

(c). 

(d). 

**9).** If the determinant of a matrix A is zero, then one of its eigenvalue of A is:

a) 1

b)0

c) -1

d) Positive

**10).** Polar form of a complex number is

a) $r(tanθ+icotθ)$

b) $r(secθ+icosecθ)$

c) $r(cosθ+isinθ)$

d) $r(sinθ+icosθ)$