## RAMAKRISHNA MISSION VIDYAMANDIRA

Belur Math, Howrah – 711 202

## **ADMISSION TEST – 2015**

## **COMPUTER SCIENCE (Honours)**

Time: 11.00 a.m - 12.00 noonDate: 19-06-2015 Full Marks: 50

Instructi	ions	for	the	cand	lidate

Answer all the questions given below. Tick  $(\checkmark)$  the correct option. Each correct answer carries 2 marks. For every

wro wo	_	deducted. Calculate	or is not all	owed. N	lo additional page	will be provided for rough		
Na	me of the student :							
Ap	plication No. :							
Sig	gnature of the invigilator:				_			
1.		A man has certain number of small boxes to pack into parcels. If he packs 3,4,5 or 6 in a parcel, he is left with one; if he packs 7 in a parcel, none is left over. What is the number of boxes he may have to pack?						
	a) 301	b) 106		c) 309		d) 400		
2.	Find the union of the following sets: $\{x x=\text{odd integer}<15\}$							
	{x x=prime number<15}							
	a) {1}	b) {1,15}		c) {1,2	2,3,5,7,9,11,13}	d) {1,3,5,7}		
3.	How many permutations of {a,b,c,d,e,f,g} end with a?							
	a) 72	b) 120		c) 48		d) None of these		
4. How many ways are there to select a first-prize winner, a second prize winner and a th from 100 different people who have entered a contest?						ner and a third prize winner		
	a) 1,00,200	b) 98,120		c) 99,7	700	d) 9,70,200		
5.	Evaluate: $\lim_{n\to\infty} x^n$ when $-1 < x < 1$ .							
	a) 0	b) +∞		c) −∞		d) No limit exist		
6.	Arrange the following items from general to particular:							
	1. Animal 2. Feline	3. Leopard	4. Mami	mal	5. Vertebrate	6. Cat		
	a) 1,5,4,2,3,6	b) 1,4,3,2,5,6		c) 1,3,	5,4,2,6	d) 1,2,3,4,6,5		
7.	In the following series how many pairs of alternate numbers have a difference of 2?							
	Series: 6 4 1 2 2 8 7 4 2 1 5 3 8 6 2 1 7 1 4 1 3 2 8 6							
	a) One	b) Two		c) Thre	ee	d) Four		
8.	How many independent words can 'DETERMINATION' be divided into without changing the order of the letters and using each letter only once?							
	a) 3	b) 1		c) 6		d) 2		
9.	If A+B means A is the which of the following s					ans A is the sister of B, then		

c)  $P+B\times R-Q$ 

d) Cannot be determined

b)  $P-B+R\times Q$ 

a)  $P+B-R\times Q$ 

10.		Similarly S is standing right	_	· ·			
	a) P	b) Q	c) R	d) O			
11.	Let $f(x) = floor(x^3/3)$ . Find $f(S)$ if $S = \{-2, -1, 0, 1, 2, 3\}$						
	a) {1,3}	b) {0,3}	c) {0,1,3}	d) {0,1,2}			
12.	If 1 1 1 1=R, 2 2 2 2=T, 3	3 3 3 3=E, 4 4 4 4=N then 5	5 5 5=?				
	a) W	b) X	c) Y	d) Z			
13.	A speaks truth in 75% of the cases and B in 80% of the cases. In what percentage of cases are they likely to contradict each other in stating the same fact?						
	a) 15%	b) 20%	c) 5%	d) 35%			
14.	How many numbers grea	ter than 0 and less than a mi	llion can be formed with the	digits 0, 7, 8?			
	a) 486	b) 1084	c) 728	d) None of these			
15.	If u, v is the weighted average and m is the natural number such that $u^m+v^m=w^m$ , then which one of the following is true?						
	a) $m \ge \min(u, v, w)$	b) $m \ge max(u, v, w)$	c) $m < min(u, v, w)$	d) None of these			
16.	A dice is loaded in such a way that the probability of getting i on the dice is proportional to i. This dice i rolled three times. What is the probability of getting a product of 15?						
	a) 10/1029	b) 14/1029	c) 16/1029	d) 18/1029			
17. A test has 50 questions. A student scores 1 mark for a correct answer, -1/3 for a wrong and not attempting a question. If the net score of a student is 32, the number of questions answer that student cannot be less than							
	a) 6	b) 12	c) 3	d) 9			
18.	Let T be the set of integers {3, 11, 19, 27, 451, 459, 467} and S be a subset of T such that the sum of no two elements of S is 470. The maximum possible number of elements in S is						
	a) 32	b) 28	c) 29	d) 30			
19.	The 288 <sup>th</sup> term of the seri	es a, b, b, c, c, c, d, d, d, d, e	e, e, e, e, eis				
	a) u	b) v	c) w	d) x			
20.	What is the remainder when 4 <sup>96</sup> is divided by 6?						
	a) 0	b) 2	c) 3	d) 4			
21.	The right most non-zero digits of the number $30^{2720}$ is						
	a) 1	b) 3	c) 7	d) 9			
22.	Let $f(x) = 1/(1-x)$ , $g(x) =$	= f(f(x)) and $h(x)=f(f(f(x)))$ ,	then the value of $f(x).g(x).h($	(x) is			
	a) 0	b) -1	c) –2	d) 2			
23.	We consider the relation "a person x shakes hand with a person y". Obviously, if x shakes hand with y then y shakes hand with x. In a gathering of 99 persons, one of the following statements is always true considering zero to be an even number. Which one is it?						
	<ul><li>a) There is at least one person who shakes hand exactly with an odd number of persons.</li><li>b) There is at least one person who shakes hand exactly with an even number of persons.</li><li>c) There is even number of persons who shake hand exactly with an even number of persons</li><li>d) None of these</li></ul>						

24.	et P, Q, R, S and T be statements such that if P is true then both Q and S are true, and if both R and	l S are
	then T is false. We then have	

- a) If T is true then both P and R must be true
- b) If T is true then both P and R must be false
- c) If T is true then at least one of P and R must be true
- d) If T is true then at least one of P and R must be false

25.	In the	following	series,	find t	he i	missing	number

90, 180, 12, 50, 100, 200, ?, 3, 50, 4, 25, 2, 6, 30, 3

a) 150

b) 175

c) 225

d) 250

## **FOR ROUGH WORK**

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