

This booklet consists of **100** questions and **12** printed pages.

RGUCET/\_\_\_\_/\_\_\_\_

Series

NIL
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RGUCET 2023

**M.Tech in COMPUTER SCIENCE AND ENGINEERING**

**Full Marks: 100**

**Time: 2 Hours**

Roll No.

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Day and Date of Examination :

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Signature of Invigilator(s) :

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Signature of Candidate :

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*General Instructions:*

***PLEASE READ ALL THE INSTRUCTIONS CAREFULLY BEFORE MAKING ANY ENTRY.***

1. DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. Candidate must write his/her Roll Number on the space provided.
3. This Test Booklet contains 100 Multiple Choice Questions (MCQs). Each question carries 1 mark. There shall be negative marking of 0.25 against each wrong attempt.
4. Please check the Test Booklet to verify that the total pages and total number of questions contained in the test booklet are the same as those printed on the top of the first page. Also check whether the questions are in sequential order or not.
5. Candidates are not permitted to enter into the examination hall 15 minutes after the commencement of the entrance test or leave the examination hall before 30 minutes of end of examination.
6. Making any identification mark in the OMR Answer Sheet or writing Roll Number anywhere other than the specified places will lead to disqualification of the candidate.
7. Candidates shall maintain silence inside and outside the examination hall. If candidate(s) is/are found violating the instructions mentioned herein or announced in the examination hall, they will be summarily disqualified from the entrance test.
8. In case of any dispute, the decision of the Entrance Test Committee, RGU shall be final and binding.
9. The OMR Answer Sheet consists of two copies, the Original copy and the Student's copy.

1	Find the correctly spelt word.				(c)	proximity
	a) musculanity	b) phosperos	c) proximity	d) promiscuous		
2	Choose the word whose meaning is most nearly <b>opposite</b> to the meaning of the word – EMERGE				(d)	disappear
	a) transpire	b) surface	c) reveal	d) disappear		
3	Find a suitable <b>preposition</b> to fill in the missing word. This car comes _____ three different models.				(a)	in
	a) in	b) with	c) of	d) by		
4	We visited the Itanagar museum where we _____ old ornaments.				(a)	saw
	a) saw	b) seen	c) see	d) sight		
5	If the computer game still doesn't run, try _____ the machine.				(b)	rebooting
	a) the reboot for	b) rebooting	c) reboot	d) to rebooting		
6	At wedding, Rajiv is always in high spirits. What does "high spirit" mean in this statement?				(d)	Cheerful
	a) Uncontrollable	b) Nervous	c) Talkative	d) Cheerful		
7	Rahim is not cut out for time bound tasks. What does "cut out" mean in this statement?				(a)	Suitable
	a) Suitable	b) Skilled	c) Considered	d) Encouraged		
8	Early Rain has brought respite to all the citizens. What is synonym of "respite"?				(d)	Interval of relief
	a) Despite	b) Uncertainty	c) In spite of	d) Interval of relief		

9	He is very discreet. What is synonym of “discreet”?				(b)	Prudent
	a) Clever	b) Prudent	c) Honest	d) Proud		
10	Slice this Guava ____ that knife.				(c)	with
	a) by	b) on	c) with	d) in		
11	Do you think that driving a car at high speed is a _____ experience?				(b)	terrifying
	a) terror	b) terrifying	c) terrified	d) terrify		
12	You can watch the show ..... 12 noon and 8 pm				(d)	between
	a) at	b) in	c) on	d) between		
13	Find the correctly spelt word				(c)	Adversity
	a)Advercety	b)Advercity	c) Adversity	d)Adverisity		
14	Find the correctly spelt word				(a)	Conciliatory
	a)Conciliatory	b)Conniliatory	c)Concilletry	d)Concilleto ry		
15	She gave a talk _____ the causes of malaria.				(b)	on
	a) off	b) on	c) for	d) of		
16	Which is the highest peak in Arunachal Pradesh?				(d)	Kangto
	a)Kanchenjunda	b) K3	c)Tempu	d)Kangto		
17	The oldest national park of Arunachal Pradesh is _____ National Park.				(a)	Namdapha
	a)Namdapha	b)Mouling	c)Pakke	d)Eaglenest		
18	“Foxtail Orchid” is state flower of both Assam and _____ .					Arunachal

					(d)	Pradesh
	a) Manipur	b) Meghalaya	c) Nagaland	d) Arunachal Pradesh		
19	First person from North East India to be honoured with Bharat Ratna was _____ .					Gopinath Bordoloi
	a) Rani Gaidinliu	b) Gopinath Bordoloi	c) Pranab Mukherjee	d) Bhupen Hazarika	(b)	
20	Arunachal Pradesh does not share international border with _____ .				(c)	Nepal
	a) Bhutan	b) China	c) Nepal	d) Myanmar		
21	The second most populous state of North East India is _____ .				(c)	Tripura
	a) Manipur	b) Arunachal Pradesh	c) Tripura	d) Meghalaya		
22	_____ number of World Heritage Sites are located in North-East India.				(d)	3
	a) 7	b) 5	c) 4	d) 3		
23	The National Flag of India was designed by _____ .				(a)	Pingali Venkayya
	a) Pingali Venkayya	b) Lala Hansraj	c) Annie Besant	d) Bhikaji Cama		
24	Southernmost point of India's territory is known as _____ .				(b)	Indira Point
	a) Kanyakumari	b) Indira Point	c) Dong point	d) Sir Creek		
25	Which of the following is not a classical language of India?				(b)	Bengali

	a) Sanskrit	b) Bengali	c) Telugu	d) Odia		
26	Which of the following interrupt has highest Priority?				b	TRAP
	a) INTR	b) TRAP	c) RST 7.5	d) RST 6.5		
27	Which directive is used to indicate the beginning of the address?				b	ORG
	a) EQU	b) ORG	c) END	d) START		
28	The mnemonics and operands fields together perform the real work of the program and accomplish the tasks.				a	Yes
	a) Yes	b) No	c) Can be Yes or No	d) Not possible to decide		
29	To which class of parsers does a shift reducer belong to?				c	bottom up parsing
	a) Predictive parsing	b) recursive descent parsing	c) bottom up parsing	d) Top Down Parsing		
30	The machine code of a program is stored in which ELF section?				a	.DATA section
	a) .DATA section	b) .CODE section	c) .PLT section	d) .MACHINE section		
31	The considered most powerful parser is				c	Canonical LR
	a) LALR	b) SLR	c) Canonical LR	d) Operator-precedence		
32	MIPS belongs to which class of processors?				b	RISC
	a) CISC	b) RISC	c) Vector processors	d) MIMD processors		
33	What does the Lexical Analyzer takes as input?				b	Source Code
	a) Tokens	b) Source Code	c) Machine Code	d) Both a and c		

34	Which of the following errors can a compiler check?				c	Syntax
	a) Logical	b) Runtime	c) Syntax	d) Both a and b		
35	The loss in signal power as light travels down the fiber is called .....					
	a) Attenuation	b) Scattering	c) Propagation	d) Reflection	a)	Attenuation
36	Which of the communication modes support two way traffic but in only one direction at a time?					
	a) Simplex	b) Half Duplex	c) Full Duplex	d) Duplex	b)	Half Duplex
37	Which transmission layer protocol is connection-less?					
	a) TCP	b) UDP	c) FTP	d) SMTP	b)	UDP
38	Which class addresses are reserved for multicasting?					
	a) Class A	b) Class B	c) Class C	d) Class D	d)	Class D
39	Which of following is not a field in the Ethernet message packet?					
	a) Data	b) Type	c) Message	d) pin code	d)	Pin code

40	To deliver a message to the correct application program running on a host, the _____ address must be consulted.					
	a) MAC	b) IP	c) Port	d) Domain name	c)	Port
41	Which of the following TCP/IP protocols is used for the file transfer with minimal capability and minimal overhead?					
	a) RARP	b) TFTP	c) Telnet	d) ARP	b)	TFTP
42	The packet of information at the Application layer is called _____					
	a) Frame	b) Message	c) Bit Stream	d) Packet	b)	Message
43	Go Back N is an example of					
	a) Frequency modulation	b) pipelined data transfer	c) serial data transfer	d) Digital modulation	b)	Digital modulation
44	In each pass of _____ sort, an unsorted element is placed at its suitable place in an already sorted list.				A	Insertion
	a) Insertion	b) Quick	c) Bubble	d) Selection		
45	When several elements are competing for the same bucket in the hash table, it is called as _____ .				C	Collision
	a) Replication	b) Duplication	c) Collision	d) Diffusion		
46	Which of the following is <b>not</b> a stable sorting algorithm in its typical implementation?				D	Quicksort
	a) Selection	b) Insertion sort	c) Mergesort	d) Quicksort		

	sort					
47	What is the best time complexity of bubble sort?				A	n
	a) n	b) n log n	c) $2^n$	d) $n^2$		
48	Which of the following function is not used in linked list implementation of Queue?				B	Add at first
	a) Add at last	b) Add at first	c) Delete from first	d) None of these		
49	Which of the following number of nodes can form a full binary tree?				C	7
	a) 8	b) 14	c) 7	d) 10		
50	Consider a complete graph G with 4 vertices. The graph G has ____ spanning trees.				C	16
	a) 15	b) 8	c) 16	d) 13		
51	A B+ tree can contain a maximum of 8 pointers in a node. What is the minimum number of keys in leaves?				B	4
	a) 7	b) 4	c) 8	d) 3		
52	_____ is the most widely used external memory data structure.				B	B Tree
	a) Red-black tree	b) B Tree	c) Height Balanced Tree	d) None of these		
53	The access method which uses key transformation is known as				(c)	Hashing
	a) Direct	b) Sequential	c) Hashing	d) Random		
54	What is the most suitable relationship between BOOKS entity and AUTHORS entity in an ER diagram?				(d)	Many to many
	a) one	b) one to many	c) many to one	d) many to many		

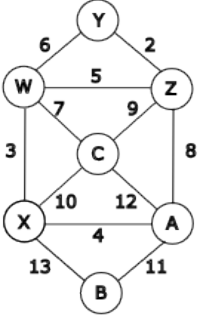
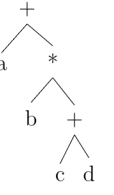
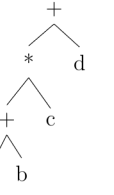
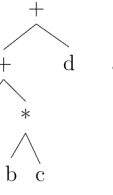
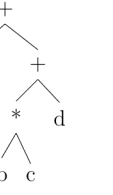


	to one					
55	Every weak entity set can be changed into a strong entity set through:				(c)	adding appropriate attributes
	a) using generalization	b) using aggregation	c) adding appropriate attributes	d) adding appropriate primary key		
56	A relation is in 3NF if it is in 2NF and there is:				(d)	No Transition Dependency
	a) Transition Dependency	b) Relational Dependency	c) No Relational Dependency	d) No Transition Dependency		
57	If not null constraint is specified on an attribute what does that mean?				(c)	It ensures that all tuples have a finite value on a specified attribute
	a) It ensures that at least one tuple is present in the relation	b) It ensures that at least one foreign key is present in the relation	c) It ensures that all tuples have a finite value on a specified attribute	d) It ensures that all tuples have finite attributes on all the relations		
58	If every non-key attribute is functionally dependent on the primary key, then the relation will be in				(a)	Third normal form
	a) Third normal form	b) Second normal form	c) First normal form	d) BCNF form		
59	Which type of JOIN is used to returns rows that do not have matching values?				B	Outer JOIN
	a) Natural JOIN	b) Outer JOIN	c) EQUI JOIN	d) Inner JOIN		

60	Commands that comes under DDL is –				C	DRO P
	a) SELE CT	b) UPDATE	c) DROP	d) INSERT		
61	Which of the following data types does the SQL standard not support?				B	Strin g(n)
	a) char(n)	b) String(n)	c) varchar(n)	d) float(n)		
62	The degree of Multiprogramming is controlled by				(c)	long term sche duler
	a) CPU scheduler	b) context switching	c) long term scheduler	d) medium-term scheduler		
63	Input transfers are done in advance and output transfers are done after sometimes in which of these techniques?				b	Buffe ring
	a) Spooling	b) Buffering	c) Swapping	d) Paging		
64	A binary semaphore .....				a	has the value s one or zero
	a) has the values one or zero	b) is essential to binary computers	c) is used only for synchronization	d) is used only for mutual exclusion		
65	Because of virtual memory, the memory can be shared among				a	proce sses
	a) processes	b) threads	c) instructions	d) programs		
66	When a program tries to access a page that is mapped in address space but not loaded in physical memory, then?				b	fatal error occur s
	a) segmentatio n fault occurs	b) fatal error occurs	c) page fault occurs	d) no error occurs		

67	The performance of cache memory is measured in terms of				c	Hit ratio
	a) Seek time	b) Access time	c) Hit ratio	d) Latency		
68	Having a small amount of internal fragmentation is the weakness of .....				b	Simple Paging
	a) Fixed partitioning	b) Simple Paging	c) Virtual memory paging	d) Simple segmentation		
69	If we preempt a resource from a process, the process cannot continue with its normal execution and it must be _____				b	rolled back
	a) aborted	b) rolled back	c) terminated	d) queued		
70	To _____ to a safe state, the system needs to keep more information about the states of processes.				b	roll back the process
	a) abort the process	b) roll back the process	c) queue the process	d) none of the mentioned		
71	Cascading termination refers to termination of all child processes before the parent terminates				c	normally or abnormally
	a) normally	b) abnormally	c) normally or abnormally	d) none of these		
72	Size and Complexity are a part of				A	Product Metrics
	a) Product Metrics	b) Process Metrics	c) Project Metrics	d) All of the mentioned		
73	Number of errors found per person hours expended is an example of a				C	Metric
	a) Measurement	b) Measure	c) Metric	d) All of the mentioned		
74	Percentage of modules that were inspected is a part of					

	a)Product Metrics	b)Process Metrics	c)Project Metrics	d)All of the mentioned	B	Process Metrics
75	How is reliability and failure intensity related to each other?				B	inverse relation
	a)direct relation	b)inverse relation	c)no relation	d)none of the mentioned		
76	Which one of the following is not a software quality model?				A	ISO 9000
	a)ISO 9000	b)McCall model	c)Boehm model	d)ISO 9126		
77	How is software reliability defined?				A	Time
	a) Time	b)efficiency	c)quality	d) Speed		
78	Identify the correct measure for correctness.				C	Defects per KLOC
	a)Error per KLOC	b)\$ per KLOC	c)Defects per KLOC	d)None		
79	Which of the following are types of code review?				C	Both A and B
	a)Code walkthrough	b)Code inspection	c)Both A and B	d)None		
80	Cost and schedule are a part of				C	Project Metrics
	a) Product Metrics	b) Process Metrics	c) Project Metrics	a) Product Metrics		
81	Maximum number of edges in a bi-partite graph with 10 vertices is				(b)	25
	a) 20	b) 25	c) 100	d) 50		

82	The maximum number of <b>leaf</b> nodes of a full binary tree of $n$ nodes is				(d)	$\frac{n+1}{2}$
a) $n^2$		b) $\frac{n^2}{2}$	c) $\frac{n}{2}$	d) $\frac{n+1}{2}$		
83	Dijkstra's algorithm is an example of				(c)	greedy approach
a) dynamic programming		b) divide and conquer	c) greedy approach	d) static programming		
84	Using Prim's algorithm, find the minimum spanning tree for the following graph.  <p>What is the sum of weight of the edges of the minimum spanning tree?</p>				(a)	32
a) 32		b) 47	c) 27	d) 36		
85	For the arithmetic expression $a + b * c + d$ , which of the following parse trees is correct?				(c)	
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>(a)</p>  </div> <div style="text-align: center;"> <p>(b)</p>  </div> <div style="text-align: center;"> <p>(c)</p>  </div> <div style="text-align: center;"> <p>(d)</p>  </div> </div>						
86	Pumping lemma for regular languages is used to prove that a language is				(c)	not regular
a) finite		b) regular	c) not regular	d) finite and regular		

87	Consider the following statements about problems in the NP class:  P. The solution of an NP problem is polynomially verifiable. Q. All NP hard problems belong to NP class.				(a)	P only
	Which of the following options are correct?					
	a) P only	b) Q only	c) Both P and Q	d) Neither P nor Q		
88	The minimum state DFA corresponding to the NFA below has ____ number of states.				(d)	4
	<pre> graph LR     A((A)) -- "0,1" --&gt; A     A -- "1" --&gt; B((B))     B -- "0" --&gt; C((C))     C -- "0" --&gt; D(((D)))   </pre>					
	a) 8	b) 6	c) 5	d) 4		
89	The statement that transfers the control to the beginning of the loop is called				c)	Continue statement
	a) break statement	b) exit statement	c) continue statement	d) jump statement		
90	Literal means				b)	a string constant
	a) string	b) a string constant	c) a character	d) an alphabet		
91	Each C preprocessor directive begins with				a)	#
	a) #	b) include	c) main()	d) {		
92	What does the following declaration mean in C language:  int (*X) [30];				b)	X is a pointer to an array
	a) X is array of pointers to 30 ints	b) X is a pointer to an array of 30 ints	c) X is an array of 30 ints.	d) X is a type declaration of pointer to int array		

						of 30 ints
93	scanf() is a predefined function in the header file				a)	stdio. h
	a) stdio.h	b) conio.h	c) stdlib.h	d) ctype.h		
94	Choose the correct C keyword below.				b)	defau lt
	a) longjmp	b) default	c) main	d) halt		
95	If the leftmost bit of a binary number is 0 in signed representation, the number is				a)	Positi ve num ber
	a) positive number	b) negative number	c) unsigned number	d) none of the above		
96	Identify the scope resolution operator				b)	::
	a) :	b) ::	c) ?	d) ++		
97	Identify the operator that can be used to replace a <b>if-else</b> statement.				c)	Condi tional oper ator
	a) Bitwise operator	b) Logical operator	c) conditional operator	d) Arithmetic Operator		
98	When can an inline function be expanded?				b)	Com pile time
	a) runtime	b) compile time	c) never gets expanded	d) both at runtime and compile time		
99	The "%p" printf format specifier is used to print				b)	addr ess
	a) procedure value	b) address	c) positive int value	d) percentage value		
100	Which of the following statement is correct about constructors?				a)	A const
	a) A constructor has no return	b) A constructor has a void return	c) A constructor has a return	d) A constructor cannot contain a		

	type.	type.	type.	function call.	ructo r has no retur n type.
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**SPACE FOR ROUGH WORK**