University of Mumbai

Examination 2020 under cluster 7 (Lead College: SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ITC701 and Course Name: Enterprise Network Design

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	The three layers of the SONA framework consists of:
Option A:	Physical layer, Network layer and Application layer
Option B:	Physical layer, Interactive Services layer and Application layer
Option C:	Networked Infrastructure layer, Interactive Services layer and Data Management layer
Option D:	Networked Infrastructure layer, Interactive Services layer and Application layer
2.	The network design is implemented and verified during which of the following phase of building a network.
Option A:	Operate Phase
Option B:	Prepare Phase
Option C:	Design Phase
Option D:	Implement Phase
3.	Decision tables help to making systematic decisions in network design when
Option A:	There are multiple solutions or options to solve a network issue or problem
Option B:	There are large number of end-users or customer who will use network
Option C:	There are problems related to network connectivity
Option D:	There are problems related to network security
4.	Of the following which is not the role of the distribution layer
Option A:	This layer provides the redundant connection to access layer and can perform load-balancing for connections.
Option B:	Routing protocols and Route summarizing is implemented at this layer
Option C:	QoS policies and Security measures are implemented at this layer.
Option D:	This layer provides connectivity to end-user devices like Desktops, printers by using switched LAN devices ports.
5.	Which of the following is not a part of Enterprise Campus Functional Area
Option A:	Building Distribution
Option B:	E-Commerce Module
Option C:	Campus Core
Option D:	Building Access
6.	A server should be able to maintain the log of all the access , system and security events that happen. This is called as _____
Option A:	Authentication

Option B:	Authorization
Option C:	Accounting
Option D:	Abstraction
7.	Of the following which is not a component of IP Telephony
Option A:	Switches enabled with in line power or PoE switches
Option B:	Call processing Manager
Option C:	Network Hub
Option D:	Voice Gateway
8.	Higher degree of scalability is the requirement of Building _____ layer of Campus Network, to enable addition of new end-user devices.
Option A:	Transport
Option B:	Core
Option C:	Network
Option D:	Access
9.	What function is provided by Building Distribution Layer of Campus Network.
Option A:	Assign Port Address
Option B:	Create Threads
Option C:	Traffic Filtration
Option D:	Sub-netting
10.	Which layer of the Cisco Enterprise Data Center Architecture is responsible to meet all bandwidth, latency and protocol requirements for user to server, server-to-server, and server-to-storage connectivity .
Option A:	Networked Infrastructure layer
Option B:	Interactive Services layer
Option C:	Business Application layer
Option D:	Collaboration Application Layer
11.	The Range and Bandwidth specifications of Copper Twisted pair cable are - .
Option A:	Range- up to 100 kilometers and Bandwidth -Up to 100 Gbps
Option B:	Range- up to 100 meters and Bandwidth -Up to 10 Gbps
Option C:	Range- up to 10 kilometers and Bandwidth -Up to 100 Gbps
Option D:	Range- up to 100 kilometers and Bandwidth -Up to 1000 Gbps
12.	What is the length of the MPLS label filed ?

Option A:	16 bits
Option B:	24 bits
Option C:	64 bits
Option D:	32 bits
13.	An interactive text based application (e.g. Remote Telnet or SSH) require WAN connectivity between two locations situated in two different cities. What is the expecation of “Throughput” and “Packet Loss Tolerance”.
Option A:	Low, Low
Option B:	Low, High
Option C:	High, Low
Option D:	High, High
14.	Which type of queue allows scheduling of the packets in to hardware queue based on the QoS Requirement?
Option A:	FIFO
Option B:	FIFS
Option C:	LLQ
Option D:	LIFO
15.	One of the IPv4-to-IPv6 Transition Strategies is _____.
Option A:	Dual-Stack Mechanism
Option B:	Compression
Option C:	Redundancy
Option D:	Matrix Mechanism
16.	If one of the locations have 350 machines, then how many minimum number of bits would be required.
Option A:	7
Option B:	8
Option C:	9
Option D:	10
17.	1892:0000:127B:0000:0000:088C:0001:004B .Compress the IPV6 address.
Option A:	1892:0:127B::88C:1:4B
Option B:	1892::127B::88C:1:4B
Option C:	1892:0:127B:0:088C:01:4B
Option D:	1892:0000:127B::88C:1:04B
18.	RIP is an example of _____Routing Protocol.
Option A:	Link State

Option B:	Distance Vector
Option C:	Hybrid
Option D:	Hierarchical
19.	_____ is a networking Controller that is written in Python.
Option A:	NOX
Option B:	Floodlight
Option C:	POX
Option D:	Ryu
20.	In Cloud computing, the OpenStack Compute is known as _____.
Option A:	Cinder
Option B:	Nova
Option C:	Swift
Option D:	Keystone

Q2 **(20 Marks)**	
A	**Solve any Two** **5 marks each**
i.	*Draw the CISCO SONA Framework. Explain the functionality of each layer in the CISCO SONA framework.*
ii.	*With a neat diagram, briefly explain the building blocks of SDN architecture.*
iii.	An Engineering College requires a highly available core network and uses IP telephony for all its voice communication with all its stakeholders. Which devices and topology would you recommend for the Campus Core design?
B	**Solve any One** **10 marks each**
i.	*What is a network audit ? If you have to carry network audit for you college network; explain in detail, how will you carry out network audit using the different network audit information sources?*
ii.	An organization has a computer terminal with the IP address 200.15.23.40 and subnet mask of 255.255.255.192 a) Identify which class the IP address belong to and why? b) Calculate how many host machines can be connected in one subnet? c) Calculate the total number of the subnets that can be formed? d) Identify the Subnetwork ID and Broadcast ID for above IP address. e) If the subnet mask is changed to 255.255.255.224 then how many

	subnets can be formed?

Q3. **(20 Marks)**	
A	**Solve any Two** **5 marks each**
i.	*Explain briefly about the Simple Network Management Protocol*
ii.	*Discuss any two techniques to optimize bandwidth in a WAN.*
iii.	What is Route Summarization, explain with help of example.
B	**Solve any One** **10 marks each**
i.	*What is Top – Down Approach to Network Design? Explain the use of Top – Down approach in network design with an example.*
ii.	*Explain the different Enterprise WAN Transport Technologies.*

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Examination 2020 under cluster ALL (Lead College:SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ITC702 and Course Name: Infrastructure Security

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	What do you mean by threat?
Option A:	Any vulnerability in an information technology system
Option B:	Protective controls
Option C:	Multilayered controls
Option D:	Possibility for a source to exploit a specific vulnerability
2.	Models which represent confidentiality preserving MAC (Mandatory Access Control) is?
Option A:	Lattice
Option B:	Bell La-Padula
Option C:	BIBA
Option D:	Clark and Wilson
3.	Which of the following is not a type of authentication method?
Option A:	Password
Option B:	Biometric
Option C:	Captcha
Option D:	PIN
4.	Operating system security describe as -
Option A:	Removing bugs from operating system
Option B:	Protecting memory, I/O devices, shareable data and network connected to the operating system
Option C:	Partitioning the operating system
Option D:	Formatting the operating system
5.	Independent malicious program that need not require any host program is called as?
Option A:	Trap doors
Option B:	Trojan horse
Option C:	Worm
Option D:	Virus
6.	SQL injection is an type of web attack in which _____ code is inserted into

	strings that are later passed to an instance of SQL Server.
Option A:	Malicious
Option B:	Redundant
Option C:	Clean
Option D:	Non malicious
7.	Which of following are security features of NTFS except -
Option A:	Security Descriptor
Option B:	Encryption
Option C:	Quotas
Option D:	Mount options
8.	Which of the following entity queries the OpenID identity provider to authenticate the veracity of the OpenID credentials?
Option A:	serving party
Option B:	relieving party
Option C:	relaying party
Option D:	Integrity checking
9.	Security service in cloud that ensures data disclosure to authorized users is
Option A:	Secure Data Access
Option B:	Data Confidentiality Assurance
Option C:	Data Integrity Protection
Option D:	Service Audition
10.	_____ is not a use of IaaS
Option A:	High -Performance Computing
Option B:	Serverless Computing
Option C:	Web Hosting and Web Apps
Option D:	Storage, backup and recovery
11.	Which of the following is use to protect systems from DOS attacks and also help in loading the web pages .
Option A:	Content Delivery Network
Option B:	Web Application Firewall
Option C:	Authentication
Option D:	Intrusion Detection System.
12.	Which of the following is NOT a mobile device security strategy
Option A:	Leverage Biometrics
Option B:	Remote Lock and Data Wipe
Option C:	Use of 4G Communication Standards
Option D:	Block Potentially Dangerous Apps
13.	Select the Strategy in which an enterprise/Individual has an ability to either remotely lock or erase all data stored on device
Option A:	Remote Lock and Data Wipe
Option B:	Personal Vault

Option C:	Device Liability
Option D:	Potential Block
14.	After entering how many times wrong PIN number SIM card gets blocked.
Option A:	2
Option B:	3
Option C:	5
Option D:	10
15.	What information is stored in cookies.
Option A:	Session ID
Option B:	Account Privileges
Option C:	UserName
Option D:	Password
16.	In which of the following exploits does an attacker insert malicious code into a link that appears to be from a trustworthy source?
Option A:	Cross-Site Scripting
Option B:	Buffer over flows
Option C:	Command injection
Option D:	Path traversal attack
17.	____ is not covered in IT Ethics issue.
Option A:	Virus
Option B:	Fraud
Option C:	Spyware
Option D:	Spam
18.	Which activities is not considered a valid form of penetration testing?
Option A:	DOS attacks
Option B:	Port Scanning
Option C:	Distribution of malicious code
Option D:	Packet sniffing
19.	What are phishing attacks?
Option A:	Users are forced to use a second server which causes the attack
Option B:	Users are forced to divert to a fake site where the attack takes place
Option C:	Users are fooled by similar GUI and data is extracted from them.
Option D:	User are diverted to new website of same company.
20.	Which of the following is appropriate for customer emails regarding a limited time promotional offer?
Option A:	Request that the user authenticate him/herself by replying to the email with their account credentials.
Option B:	Personalized greeting line
Option C:	Providing easy access to the customer's account via a “Click Here” style link
Option D:	Sending the email from a domain set up specifically for the special offer

Q2	Solve any Four out of Six 5 marks each
A	What is buffer overflow vulnerability, what way it could be exploited to harm the system.
B	Explain the processing of the information so as to achieve its confidentiality, integrity and non-repudiation.
C	Explain various security algorithms used in GSM architecture.
D	Describe various risk associated with cloud.
E	www.irctc.com website uses SSL or SET protocol or both, Justify your answer with proper justification.
F	Explain ethical issues in security management.

Q3.	Solve any Two Questions out of Three 10 marks each
A	What is a firewall? List the type of firewalls categorized by processing mode. Draw a schematic diagram of a packet filtering router used as a firewall and explain its function using a sample firewall rule.
B	Explain the programming flaws in the various components of a web application that leads to the SQL injection vulnerability. Also discuss the countermeasures.
C	Explain the logical and physical attacks on Wireless LAN.

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Examination 2020 under cluster ALL (Lead College:SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ITC703 and Course Name: Artificial Intelligence

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	AI practices solve the hard problems in ---- time by ---- domain knowledge.
Option A:	Polynomial, exploring
Option B:	Polynomial, exploiting
Option C:	Non-polynomial, exploring
Option D:	Non-polynomial, exploiting
2.	In --- AI program he, generated a plan to drive to the airport to catch a plane.
Option A:	McCarthy's
Option B:	David Waltz's
Option C:	Marvin Minsky's
Option D:	McCulloch's
3.	In total Turing Test, which of the following capabilities were not included.
Option A:	Robotics
Option B:	Computer Vision
Option C:	Game Playing
Option D:	NLP
4.	The --- don't get benefited by perspective and global viewpoint, they can see only node in the search space.
Option A:	Search Algorithms
Option B:	Machine Learning Algorithms
Option C:	Fuzzy Algorithms
Option D:	Neural Network Algorithms
5.	Which statement is true: I: Iterated Hill Climbing algorithm has the same space requirement as Hill Climbing II: Both need a constant amount of space to run.
Option A:	Only I
Option B:	Only II
Option C:	I and II
Option D:	I and II are false
6.	In prisoner's Dilemma, what is the rational choice for both the players?
Option A:	Confess
Option B:	Deny

Option C:	Telling lies
Option D:	Keep mum
7.	In a complex game which has very large search tree, the ----- is applied to ------, because we cannot evaluate full tree.
Option A:	Evaluation function, Goal node
Option B:	Evaluation function, Intermediate node
Option C:	Objective function, Leaf node
Option D:	Objective function, Root node
8.	Which property of the Heuristic function guarantees to find optimal path.
Option A:	Admissibility
Option B:	Monotone
Option C:	Completeness
Option D:	Optimality
9.	Every cat has a tail, can be represented as
Option A:	∃x has (x, tail)
Option B:	∀x has (x, tail)
Option C:	∃x cat(x) → has (x, tail)
Option D:	∀x cat(x) → has (x, tail)
10.	The symbolization of a disjunction is
Option A:	p → q
Option B:	p & q
Option C:	p v q
Option D:	~ p
11.	Which set of methods are used for inferencing in first order logic?
Option A:	Forward reasoning, backward reasoning and joint probability.
Option B:	Left reasoning, right reasoning and resolution.
Option C:	Minmax reasoning and pruning.
Option D:	Forward reasoning, backward reasoning and resolution.
12.	In real life problem solving, plans are
Option A:	Only Total order
Option B:	Only Partial order
Option C:	Combination of all types
Option D:	Only conditional
13.	In general, resolution refutation uses
Option A:	AND-OR graphs
Option B:	Only AND graphs
Option C:	Only OR graphs
Option D:	Cyclic graphs
14.	Which of the following is a feature of quantifiers?
Option A:	Universal quantifier is used to get exact number of entities.
Option B:	Negation of Existential quantifier means the number of entities is zero.
Option C:	Existential quantifier is negation of Universal quantifier.

Option D:	Existential quantifier is used to get exact number of entities.
15.	Uncertainty means _____
Option A:	that many of the simplifications that are possible with deductive inference are no longer valid.
Option B:	that many of the simplifications that are possible with deductive inference are always valid.
Option C:	Probability = 1
Option D:	Possibilities with guarantee
16.	Bayes' rule allows _____
Option A:	known probabilities to be computed from unknown, stable ones.
Option B:	unknown probabilities to be computed from known, stable ones.
Option C:	Distance calculation
Option D:	Logarithmic Differential
17.	Which of the following is an application of NLP
Option A:	Email spam filtering
Option B:	Map coloring
Option C:	OLTP Transaction
Option D:	Resource allocation
18.	Which of the following is a Natural Language Processing stage?
Option A:	Query optimization
Option B:	Crypt Arithmetic
Option C:	Datatype casting
Option D:	Syntactic analysis
19.	Which of the following concepts make a system cognitive?
Option A:	Random learning
Option B:	Syntax definition
Option C:	contextual insight from the model
Option D:	Data extraction
20.	What is Corpus?
Option A:	Unorganized files of a particular domain
Option B:	Unorganized files generalized to all domains
Option C:	A machine-readable representation of the complete record of a particular domain or topic
Option D:	Infinite list of words that are logically unordered.

Q2.	**Solve any Two Questions out of Three** **10 marks each**
A	What is AI? Considering the COVID-19 pandemic situation, how AI helped to survive and renovated our way of life with different applications?
B	1.Convert the following to predicates: **6 marks** a. Anita travels by Car if available otherwise travels by bus. b. Bus goes via Andheri and Goregaon. c. Car has puncture so is not available. 2.Will Anita travel via Goregaon? Use forward reasoning. 4 **marks**

C	Demonstrate Bayes Theorem using Conditional Probability? Out of 5000 patients how many with stiff necks are suffering with meningitis if the following facts are known: 1. Meningitis causes patients to have stiff neck 50% of the time. 2. Probability of person having meningitis is 1/50000. 3. Every 1 out of 20 patients has stiff neck.

Q3.	**Solve any Two Questions out of Three** **10 marks each**
A	If you know the strategy of the opponent player, you can estimate all his/her moves correctly. Is the above statement True or False in context of game of Chess? Justify your answer.
B	1. Explain the working of hierarchical plan with an example. **5 marks** 2. Plan and explain Air Cargo Transport from Delhi to Mumbai. **5 marks**
C	Explain tokenization, stemming and lemmatization with example.

University of Mumbai

Examination 2020 under cluster ALL (Lead College:SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: **ITDLO7031** and Course Name: **SAN**

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	in ISS, the cache is used between FE and BE for
Option A:	fast data transfer
Option B:	data storage
Option C:	data security
Option D:	data compression
2.	information life cycle is
Option A:	change in the volume of information over a period of time
Option B:	change in value of information over a period of time
Option C:	availability of information storage space over a period of time
Option D:	amount of information processed over a period of time
3.	the three techniques used to define the RAID level are
Option A:	replication,mirroring,segmentation
Option B:	replication duplication,backup
Option C:	striping, mirroring,parity
Option D:	striping, segmentation, parity,
4.	what is not a physical component of the hard disk
Option A:	Sectors
Option B:	Tracks
Option C:	Head
Option D:	Cylinder
5.	NFS file sharing protocol is used for which OS?
Option A:	UNIX
Option B:	WINDOWS
Option C:	LINUX
Option D:	MAC
6.	In a ____ NAS solution, external and dedicated storage can be used.
Option A:	low-end
Option B:	low-high
Option C:	high-end
Option D:	high-low

7.	An _____ NAS device has all the components of NAS, such as the NAS head and storage, in a single enclosure, or frame
Option A:	Integrated
Option B:	Gateway
Option C:	Integral
Option D:	Simple
8.	The technology that offers best performance is
Option A:	DAS
Option B:	SAN
Option C:	NAS
Option D:	CAS
9.	Which one is a major classification of zoning?
Option A:	Freeware
Option B:	Soft
Option C:	Hard
Option D:	Software
10.	Which type of storage does hyper-converged infrastructure (HCI) more closely resemble?
Option A:	NAS
Option B:	DAS
Option C:	CAS
Option D:	SAN
11.	SCSI stands for _____
Option A:	Small Computer System Interface
Option B:	Small Computer System Interconnect
Option C:	System Computer Select Interface
Option D:	Small Computer Simple Interface
12.	user access information required for workload analysis is
Option A:	number of transaction,time period and expected service level
Option B:	number of incomplete transactions,their reasons and their cost
Option C:	number of wrong transactions, their cost and location
Option D:	number of bugs detected, their locations and solution provided
13.	what makes the web transactional workload solutions more complex
Option A:	distributed nature of the web
Option B:	messaging transactions
Option C:	client server model type
Option D:	number of web pages
14.	the data organizational model of NAS for departmental workload has
Option A:	client based system
Option B:	block level data transfer system
Option C:	file level data transfer system
Option D:	intelligent information system

15.	information life cycle has_____ number of phases
Option A:	7
Option B:	4
Option C:	6
Option D:	5
16.	Which protocols are used for Storage management
Option A:	POPv
Option B:	SNMP
Option C:	LDAP
Option D:	POP3
17.	Of which process should Business Continuity programs be a part?
Option A:	Incident Management process
Option B:	Compliance process
Option C:	Governance process
Option D:	Problem Management process
18.	What is the most common technique used for finding duplicate blocks/data?
Option A:	Bit-for-bit comparisons on all new blocks
Option B:	Encryption
Option C:	Hashing and fingerprinting
Option D:	Storing all blocks
19.	Which of the following capacity optimization technologies is being described: Space is allocated to volumes on-demand as data is written to the volume?
Option A:	Deduplication
Option B:	Compression
Option C:	Auto-tiering
Option D:	Thin Provisioning
20.	Clients use which protocol to discover SMI Agents on Storage Area Network?
Option A:	SLP (Service Location Protocol)
Option B:	AGP(Agent Discovery Protocol)
Option C:	SMIP (SMI Protocol)
Option D:	SIP

Q2 **(20 Marks)**	**Solve any Four out of Six** **5 marks each**
A	draw and explain nested RAIDs with any application
B	How does the use of jumbo frames affect the NAS performance?
C	Explain FC ports and login types.
D	explain rotational latency, seek time and transfer rate in case of HDD
E	Explain failure analysis for Business Continuity and explain Business Continuity
F	explain the concept of workload characterization

Q3 **(20 Marks)**	**Solve any Four Questions out of Six** **5 marks each**
A	what information is provide by the data organizational model for workload behavior
B	Describe the NAS implementation.
C	What is zoning? Discuss a scenario, where soft zoning is preferred over hard zoning
D	explain how parity is used in RAID memory
E	Explain storage security domain and implementation in storage networking
F	*e*xplain the various characteristics of a data centre

University of Mumbai

Examination 2020 under cluster ALL (Lead College: SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ITDLO7033 and Course Name: High Performance Computing

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	If the time taken by the processor to access any memory word in the system is identical, then it is called as _____multicomputer.
Option A:	synchronous memory access
Option B:	uniform memory access
Option C:	non-uniform memory access
Option D:	asynchronous memory access
2.	Which of the following interconnection network results in higher cost (number of communication links)?
Option A:	2D wraparound mesh
Option B:	Complete binary tree
Option C:	Star
Option D:	Completely connected
3.	In which of the following, inter process communication takes place?
Option A:	Shared memory
Option B:	Nonshared memory
Option C:	Message passing
Option D:	Synchronous memory
4.	SIMD machines are inherently _____.in nature.
Option A:	Fast
Option B:	Asynchronous
Option C:	Synchronous
Option D:	Cost efficient
5.	The maximum number of tasks that can be executed at any time in a parallel algorithm is called as _____.
Option A:	Degree of concurrency
Option B:	Speedup
Option C:	Efficiency
Option D:	Rate of processing

6.	Fat tree-based network is a special case of _____ tree network.
Option A:	Static tree network
Option B:	Dynamic tree network
Option C:	Linear array network
Option D:	Star connected network
7.	Which of the following does not contribute to calculation of communication latency
Option A:	Startup time
Option B:	Pre-hop time
Option C:	Pre-word transfer time
Option D:	Processing time
8.	Which of the following is not true with respect to deterministic routing
Option A:	It does not use information regarding the state of the network.
Option B:	It is special case of adaptive routing.
Option C:	XY routing is deterministic routing for 2D mesh.
Option D:	E-cube routing is deterministic routing for hypercube.
9.	Omega network is _____ interconnection network.
Option A:	Single stage
Option B:	Multistage
Option C:	Crossbar
Option D:	Bus based
10.	Data parallel programming utilizes _____ data allocation.
Option A:	Implicit
Option B:	Explicit
Option C:	Semi explicit
Option D:	Implicit or semi-implicit
11.	Which of the following is not a characteristic of task?
Option A:	Task generation
Option B:	Task size
Option C:	Size of data associated with tasks
Option D:	Interdependencies among tasks
12.	15-puzzle problem is an example of
Option A:	Recursive decomposition
Option B:	Exploratory decomposition
Option C:	Data decomposition
Option D:	Speculative decomposition
13.	Shared variable parallel programming model possesses which of the flowing synchrony?
Option A:	Asynchronous
Option B:	Synchronous

Option C:	Loosely Synchronous
Option D:	Loosely Asynchronous
14.	If 25% of the operations in a parallel program must be performed sequentially, what is the maximum speedup achievable?
Option A:	25
Option B:	8
Option C:	4
Option D:	2
15.	Which of the following static network topology results into minimum diameter
Option A:	Star
Option B:	Completely connected
Option C:	Complete binary
Option D:	2D Mesh
16.	In this cache system, all processors monitor the bus for transaction
Option A:	CPU cache
Option B:	RAM cache
Option C:	Register cache
Option D:	Snoopy Cache
17.	For which of the following architecture data parallel model cannot be applied
Option A:	SIMD
Option B:	SIMT
Option C:	SPMD
Option D:	MIMD
18.	The primary and essential mechanism to support the sparse matrices is
Option A:	Gather operations
Option B:	Gather-scatter operations
Option C:	Scatter operations
Option D:	Gather-scatter technique
19.	CUDA does not support this type of parallelism.
Option A:	Thread
Option B:	Data
Option C:	Block
Option D:	Vector
20.	CUDA stand for
Option A:	Compute Ubiquitous Device Architecture
Option B:	Compute Unit Data Architecture
Option C:	Compute Unified Device Architecture
Option D:	Compute Unit Device Architecture

Q2.	Solve any Four out of Six 5 marks each
A	Compare the principles of data flow computers and control flow computers.
B	Write a short note on Memory organization.
C	What is meant by grain packing and scheduling in parallel processing?
D	Give the advantages non-uniform memory access model.
E	What is Granularity, Concurrency and Dependency Path?
F	State principles of Message Passing Programming?

Q3.	Solve any Two Questions out of Three 10 marks each
A	Derive the expression for speedup and efficiency by Amdahl's law and comment on the same. Assume suitable data if required.
B	Define CUDA? Explain in CUDA processor architecture?
C	Write a MPI program for prime number generation.

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Examination 2020 under cluster ALL (Lead College: SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: **ITDLO7032** and Course Name: **Mobile Application Development**

Time: 2 hour Max. Marks: 80

Q1.	**Choose the correct option for the following questions. All the questions are compulsory and carry equal marks (40 Marks)**
1.	What is NOT a part of Android's native libraries?
Option A:	OpenGL
Option B:	SQLite
Option C:	Dalvik
Option D:	Webkit
2.	Which of the following contains all the code that provides the main features of an Android OS?
Option A:	Linux kernel
Option B:	Libraries
Option C:	Android runtime
Option D:	Application
3.	To create an emulator, you need an AVD. What does it stand for?
Option A:	Android Virtual Display
Option B:	Android Virtual Device
Option C:	Active Virtual Device
Option D:	Application Virtual Display
4.	Which of the following events is not defined by the Activity class.
Option A:	onCreate()
Option B:	onStart()
Option C:	onFinish()
Option D:	onDestroy()
5.	Which among the following widget toolbox control is used to perform a standard push-button operation.
Option A:	ToggleButton
Option B:	Button
Option C:	RadioButton
Option D:	ImageButton
6.	What is contained within the Layout XML file?
Option A:	Orientations and layouts that specify what the display looks like.

Option B:	The permissions required by the app
Option C:	The strings used in the app.
Option D:	The code which is compiled to run the app.
7.	Android does not support the following ViewGroups (Layouts).
Option A:	LinearLayout
Option B:	FrameLayout
Option C:	TableLayout
Option D:	StackLayout
8.	What is a mechanism that lets anonymous application components service action requests?
Option A:	explicit Intent
Option B:	implicit Intent
Option C:	activity
Option D:	Application
9.	What is the name of the class used by Intent to store additional information?
Option A:	Extra
Option B:	Parcelable
Option C:	Bundle
Option D:	Datastore
10.	Which techniques can be used to minimize your application's battery cost.
Option A:	Create a new connection every time
Option B:	Reuse existing connections rather than creating new ones
Option C:	Don't create any connection
Option D:	Report a bug
11.	What is a helper class that creates hyperlinks within the Text View?
Option A:	Activity
Option B:	Button
Option C:	TextView
Option D:	Linkify
12.	What is JSON in android?
Option A:	Java Script Object Native
Option B:	Java Script Oriented Notation
Option C:	Java Script Object Notation
Option D:	Java Script Open Notation
13.	Status data will be exposed to the rest of the Android system via
Option A:	Intent
Option B:	A content provider
Option C:	Network receivers
Option D:	Altering permissions
14.	Each SQLite database query is returned as a _____.
Option A:	Content Values
Option B:	Cursor

Option C:	Content Providers
Option D:	Applications
15.	What are used to insert new rows into the table?
Option A:	Content Values
Option B:	Intents
Option C:	Activity
Option D:	Content Provider
16.	Which of the following network protocol is not supported for streaming media?
Option A:	RTSP (real time streaming protocol)
Option B:	HTTP/HTTPS progressive streaming
Option C:	HTTP/HTTPS live streaming
Option D:	FTP
17.	Which is not a valid resource for loading audio files?
Option A:	res/raw resource folder
Option B:	local file
Option C:	online audio resource
Option D:	Bluetooth
18.	The Media Player also provides the _____ method to find the length of the media being played.
Option A:	getDuration
Option B:	getCurrentPosition
Option C:	seekTo
Option D:	setMediaController
19.	What is BusyBox in android?
Option A:	a collection of command line tools
Option B:	network scanner tool
Option C:	network sniffer tool
Option D:	packet capturing tool
20.	Following are the four stages of the pen test
Option A:	Discovery-planning-attack-reporting
Option B:	planning-discovery-reporting-attack
Option C:	planning-discovery-attack-reporting
Option D:	attack -discovery-planning-reporting

Q2	**Solve any Two Questions out of Three** **10 marks each**
A	With a neat diagram, show the major components of the Android stack.
B	How View and ViewGroup are used for developing android applications?
C	What is an Intent object? What information Intent object consists of? Explain different types of intents along with their usage.

Q3	**Solve any Two Questions out of Three** **10 marks each**
A	List various data storage options. What is SQLite database? Write in brief and explain code to create a database of your choice in SQLite.(Write Java code related to creating database only)
B	Explain the Camera API in Android with suitable examples.
C	What are the steps required to publish a mobile App?

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Examination 2020 under cluster 7 (Lead College: SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ITDLO7034 and Course Name: Software Testing and Quality Assurance

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	In the testing scenario, you need to compare the final system with the needs of customers that are agreed upon, what is this called?
Option A:	Functional Testing
Option B:	Integration Testing
Option C:	Acceptance Testing
Option D:	System Testing
2.	Static and Dynamic testing are part of …
Option A:	Testing strategy
Option B:	Testing techniques
Option C:	Testing tactics
Option D:	Testing tools
3.	The inability of a system or component to perform a required function according to its specification is called as _____.
Option A:	Failure
Option B:	Bug
Option C:	Fault
Option D:	Error
4.	----------activity does not require software measurement
Option A:	Development
Option B:	Understanding
Option C:	Control
Option D:	Improvement
5.	What is the meaning of term "Timeboxed" in Agile method?
Option A:	Frequent
Option B:	Flexible
Option C:	Fixed
Option D:	Fast

6.	Final decision for selection of automation tool will depend on
Option A:	cost
Option B:	balancing cost and benefit, awareness of tool
Option C:	selection of any tool without awareness
Option D:	selecting any free software
7.	Which are the components of a testing strategy?
Option A:	Verification and Validation
Option B:	Test Planning and execution
Option C:	Test factor and test phase
Option D:	Testing Tactics and techniques
8.	Boundary Value analysis technique is considered a technique that uncovers the bugs at _____
Option A:	the median of input data set
Option B:	the end of output
Option C:	at the boundary of output
Option D:	At the boundary of input values
9.	A node with more than one arrow leaving it is called a _____.
Option A:	Decision node
Option B:	Junction node
Option C:	Region
Option D:	Complex node
10.	Which of the McCall's Quality Criteria means the ability to link software components to requirements?
Option A:	Simplicity
Option B:	Generality
Option C:	Conciseness
Option D:	Traceability
11.	Types of Performance Testing …
Option A:	Load, Stress, Capacity
Option B:	Controller, Analysis
Option C:	Launcher, Load Generator
Option D:	Analysis, Load Generator
12.	Which type of test plan is designed in the High level design phase?
Option A:	Acceptance Test plan
Option B:	System Test Plan

Option C:	Function and Integration Test Plan
Option D:	Unit test Plan
13.	If the outputs are not according to the standards or conventions , then it is _____
Option A:	Critical bugs
Option B:	Major bug
Option C:	Medium bugs
Option D:	Minor bugs
14.	How is the acceptance testing performed in Agile approach?
Option A:	Whenever customer demands
Option B:	Once the system is complete
Option C:	Daily
Option D:	After each iteration
15.	As per the guidelines for defining equivalence classes, if an input condition requires a specific value then how many equivalence classes are defined?
Option A:	Two valid and one invalid
Option B:	One valid and two invalid
Option C:	One valid and one invalid
Option D:	Two valid and two invalid
16.	Selenium supports Mobile Web Applications & _____
Option A:	Desktop Applications
Option B:	Computer Web Applications
Option C:	Mobile Native Applications
Option D:	Mobile Hybrid Applications
17.	For 'n' variables how many test cases can be designed using Boundary Value Checking method?
Option A:	6n+1
Option B:	4n+1
Option C:	6n-1
Option D:	4n+log (n+1)
18.	Which is not the measure to assess a web application?
Option A:	Maintainability
Option B:	Usability
Option C:	Navigability
Option D:	The content
19.	When the test leader approves that the bug is genuine, its state becomes
Option A:	New
Option B:	Open
Option C:	Closed
Option D:	Deferred

20.	The objective of any test case is ____
Option A:	To have minimum coverage and capability to discover more and more errors.
Option B:	To have maximum coverage and capability to discover more and more errors.
Option C:	To have minimum coverage and capability to discover less errors.
Option D:	To have maximum coverage and capability to discover less errors.

Q2 **(20 Marks Each)**	**Solve any Two Questions out of Three** **10 marks each** ***Please delete the instruction shown in front of every sub question***
A	A program calculates the total salary of an employee with the conditions that if the working hours are less than or equal to 52, then give normal salary. The hours over 52 on normal working days are calculated at the rate of 1.20 of the salary. However, on holidays or Sundays, the hours are calculated at the rate of 2.50 times of the salary. Design test cases using decision table testing..
B	Explain the difference between Quality Assurance (QA) and Safety Assurance (SA) from the perspective of your project and which one you will prefer.
C	Explain the differences between software testability and reliability? Which one is more important from your project point of view? Justify your answer.

Q3 **(20 Marks Each)**	**Solve any Two Questions out of Three** **10 marks each** ***Please delete the instruction shown in front of every sub question***
A	Explain challenges faced in testing for web based system
B	Explain ISO-9000-2000 requirements for software quality management
C	Why regression testing is so important while developing a new software release. Which test cases from the test suite would be more useful in performing a regression test?

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Examination 2020 under cluster ALL(Lead College: SSJCOE)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Information Technology**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ITDLO7035 and Course Name: Soft Computing

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Consider two fuzzy sets, A= {0.2/x1 + 0.3/x2 + 0.4/x3 + 0.7/x4 + 0.1/x5} and B= {0.4/x1 + 0.5/x2 + 0.6/x3 + 0.8/x4 + 0.9/x5}. Lambda-cut for Intersection of fuzzy set A & B for lambda=0.5 is _____
Option A:	{x4}
Option B:	{x5}
Option C:	{x3, x4}
Option D:	{x4, x5}
2.	Hebbian learning rule is
Option A:	Supervised learning
Option B:	Semi – supervised learning
Option C:	Unsupervised learning
Option D:	Error correction based learning
3.	The height h(F) of a fuzzy set F is defined as h(F) =sup F(x) where x belongs to F. Then the fuzzy set F is called normal when
Option A:	h(F)<0
Option B:	h(F)=1
Option C:	h(F)<1
Option D:	h(F)=0
4.	Projection operation on binary fuzzy relation results in
Option A:	Fuzzy set
Option B:	Crisp set
Option C:	Universal set
Option D:	Empty set
5.	Precise Fuzzy modelling is characterized by
Option A:	High interpretability and high accuracy
Option B:	Low interpretability and low accuracy
Option C:	High interpretability but low accuracy
Option D:	Low interpretability but high accuracy
6.	Select the correct learning type in which the teacher returns reward and punishment to learner so that it helps learner to improve at every stage of learning.

Option A:	Reinforcement learning
Option B:	Active learning
Option C:	Unsupervised learning
Option D:	Supervised learning
7.	Designing a fuzzy logic machine include sequence of steps as
Option A:	Rule evaluation->Fuzzification->Defuzzification
Option B:	Fuzzy Sets->Defuzzification->Rule evaluation
Option C:	Fuzzification->Rule evaluation->Defuzzification
Option D:	Defuzzification->Rule evaluation->Fuzzification
8.	Select the correct match from the following
Option A:	chromosome->individual, gene-> bits, Alleles-> Feature, crossover->mutate, Phonotype->encoded structure
Option B:	chromosome->individual, gene-> bits, Locus-> Position of gene, Phonotype->decoded structure
Option C:	chromosome->individual, gene-> bits, Alleles-> Feature extract, crossover->mutate, Phonotype->encoded structure
Option D:	chromosome->individual, gene-> bits, Alleles-> Feature evaluate, crossover->mutate, Phonotype->encoded structure
9.	Select the technique which is used as Pre-processing step to process on image
Option A:	Zoning
Option B:	Error root mean square
Option C:	Elitism
Option D:	Skew Correction
10.	To select fitter candidates over weaker candidates which of the following strategies used
Option A:	Roulette Wheel, Steady state, Elitism, circle selection
Option B:	Roulette Wheel, Tournament ,Rank, Steady state, Elitism
Option C:	Tournament ,Rank, Steady state, Elitism, differential selection
Option D:	Roulette Wheel, oval selection ,Steady state, Elitism
11.	What are the general tasks that are performed with backpropagation algorithm?
Option A:	Clustering and Prediction
Option B:	Clustering and Analysis
Option C:	Analysis and clustering
Option D:	Prediction and function approximation
12.	Select the Encoding scheme used for having advantage over binary and octal encoding over its smaller size
Option A:	Hexadecimal
Option B:	Real
Option C:	Value encoding
Option D:	Integer
13.	The total delta measures total absolute change in network connection weights for each pass of the training data through neural network. This value is most often used to determine the convergence of a
Option A:	Fuzzy logic

Option B:	Backpropagation network
Option C:	Self-organizing network
Option D:	Evolutionary logic
14.	How many genes will be used in a chromosome of each individual if the number of cities is 15?
Option A:	15 genes
Option B:	10 genes
Option C:	14.5genes
Option D:	14 genes
15.	Select the correct option that determines genetic algorithm different from conventional optimization algorithm
Option A:	genetic algorithm works for both Continuous functions whereas conventional methods of optimization works on Non-continuous
Option B:	genetic algorithm works for both Continuous and Non-continuous functions whereas conventional methods of optimization works on Continuous and differential
Option C:	genetic algorithm works for both Continuous and differential functions whereas conventional methods of optimization works on Continuous and Non-continuous
Option D:	genetic algorithm works for both Non-Continuous functions whereas conventional methods of optimization works on continuous
16.	ART1 (Adaptive Resonance Theory I) network resolves the problem
Option A:	Elasticity-plasticity dilemma
Option B:	Noise-saturation dilemma
Option C:	Elasticity-stability dilemma
Option D:	Stability-elasticity dilemma
17.	The method 'skew detection and correction' is required in
Option A:	Character recognition application
Option B:	Optimization of Travelling salesman problem
Option C:	Quadratic equation solving
Option D:	Fuzzy inference system
18.	Hybrid Neuro-fuzzy system is the combined result of best features selected from Neural network and fuzzy logic such as
Option A:	Neural network is an evolutionary algorithm make use of natural selection and fuzzy logic helps in adjusting to a new environment.
Option B:	Neural network can deal well with raw data as they are good at performing low level computation, while fuzzy logic makes use of linguistic variables which are obtained from domain experts for reasoning at higher level.
Option C:	Fuzzy logic can deal well with raw data as they are good at performing low level computation, while Neural Network makes use of linguistic variables which are obtained from domain experts for reasoning at higher level.
Option D:	Fuzzy logic adjust with new environment and have learning ability that can be achieved by integrating neural network into the system
19.	How is fuzzy logic different from conventional control methods?
Option A:	FOR Approach
Option B:	WHILE Approach

Option C:	IF and THEN Approach
Option D:	DO Approach
20.	In ANFIS architecture the 3rd layer is
Option A:	Fuzzification layer
Option B:	Fuzzy rule layer
Option C:	Normalization layer
Option D:	Defuzzification layer

Q2	**Solve any Four out of Six 5 marks each**
A	Write steps of character recognition using Neural Network
B	Define Support ,Core, Crossover points, Normality and Convex Fuzzy Sets
C	Explain advantages of Genetic Fuzzy Hybrid System
D	How are genetic algorithms different from traditional methods?
E	For a fuzzy sets A and B defined on the universe X= {0,1,2,3,4,5,6,7,8} A= {0.2/2,0.7/3,1/4,0.3/5,0.2/6} B= {0.2/1,0.3/2,0.6/3,1/4,0.7/5} Determine the intersection, union and compliment of fuzzy sets A & B
F	Implement AND function using McCulloch-Pitts neuron(take binary data)

Q3.	**Solve any Two Questions out of Three 10 marks each**
A	Explain Genetic Neuro Hybrid System with block diagram.
B	What do you mean by learning? List different learning rules and explain any two with suitable diagrams
C	Solve the problem using genetic algorithm to maximize the function $f(x)=x^2$ when $x \epsilon [0,30]$. Show computations of minimum one generation.

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Examination 2020 under cluster ALL (Lead College: VCET)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **ALL_Institute Level Optional Course 1**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ILO 7016 and Course Name: Cyber Security and Laws

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Which of the following are wireless attacks?
Option A:	MAC Spoofing , Phishing
Option B:	Eavesdropping,, MAC Spoofing
Option C:	Phishing, Repudiation
Option D:	Eavesdropping , Non- Repudiation
2.	This attack can be deployed by infusing a malicious code in a website's comment section.
Option A:	Cross Site Request Forgery (XSRF)
Option B:	SQL injection
Option C:	HTML Scripting
Option D:	Cross Site Scripting (XSS)
3.	The Objective of Firewalls is to protect?
Option A:	Data Driven Attacks
Option B:	Unauthorized Access
Option C:	Confidentiality
Option D:	Integrity
4.	The user activities are sniff and forward this information as a background process to the attackers
Option A:	Adware
Option B:	Malware
Option C:	Spyware
Option D:	Warms
5.	It is a class of computer threat?
Option A:	Stalking
Option B:	Phishing

Option C:	DOS attacks
Option D:	Soliciting
6.	Someone posing as IT tech requests information about your computer configuration. What kind of attack is this?
Option A:	Whaling
Option B:	Social Engineering
Option C:	Insider Threat
Option D:	Phishing
7.	The Primary objective of worm is to Spread the infection from….
Option A:	computer to computer
Option B:	File to file on a computer
Option C:	Website to website
Option D:	Router to routers
8.	It is usually targeted by nature where the emails are exclusively designed to target any exact user.
Option A:	Algo-based phishing
Option B:	Vishing
Option C:	Domain Phishing
Option D:	Spear phishing
9.	In this attack, someone is repeatedly harassed to individuals or organizations using any electronics means.
Option A:	Identity theft
Option B:	Phishing
Option C:	Cyber stalking
Option D:	Bullying
10.	It is a kind of attempts by individuals to get confidential or sensitive information from a individuals to falsifying their identity?
Option A:	Identity theft scam
Option B:	Phishing scams
Option C:	Spyware scams
Option D:	Trojan horse Scam

11.	It cannot be exploited by assigning or by licensing the rights to others.
Option A:	Designs
Option B:	Patents
Option C:	Copy rights
Option D:	Trademark
12.	Which of following would not gain copyright protection?
Option A:	A DVD
Option B:	An unrecorded speech
Option C:	Written lyrics of a song
Option D:	A hand knitted jumper
13.	Which one of the following statements is true?
Option A:	The definition of an invention is set out in the Patents Act 1977.
Option B:	Copyright must be registered in order to gain protection.
Option C:	A patent must be registered in order to gain protection.
Option D:	The owner of a patent cannot sell it but can prevent others using his invention.
14.	Which one of the following is outside the scope of IT Act 2000
Option A:	Electronic message
Option B:	Electronic Evidence
Option C:	Power of Attorney with digital signature
Option D:	Electronic gift
15.	Which Act casts responsibility on body corporate to protect sensitive personal information and provide punishment for offences by companies.
Option A:	IT Act 2000
Option B:	Indian Evidence Act 1872
Option C:	Indian penal code
Option D:	IT (Amendment)Act 2008
16.	What is the proposed punishment for Cyber Terrorism in IT Act?
Option A:	10 year imprisonment
Option B:	Life Imprisonment

Option C:	5 year imprisonment
Option D:	1 Lac rupees penalty
17.	Which of the following NERC Standard provide cyber-security framework for identification and protection of critical cyber assets to support the reliable operation of BES
Option A:	CIP-001
Option B:	CIP-002
Option C:	CIP-002 through CIP-009
Option D:	CIP-003
18.	Standard CIP-002 is used for
Option A:	Critical cyber asset identification
Option B:	Electronic Security Perimeter
Option C:	Physical Security of Critical cyber assets
Option D:	Sabotage reporting
19.	Which of the following are part of key provisions of Sarbanes-Oxley Act ?
Option A:	Physical Security of Critical cyber assets
Option B:	Bulk Electric System (BES)
Option C:	Critical assets
Option D:	Corporate Responsibility for financial reports
20.	ISO 27000 was originally published in ____ as the BS 7799 by the British Standards Institute (BSI)
Option A:	1995
Option B:	1998
Option C:	2000
Option D:	2012

Q2 **(20 Marks)**	
A	**Solve any Two** **5 marks each**
i.	Explain Active and Passive Attacks with example
ii.	Explain how Appeal can be made under the IT Act 2000
iii.	Explain Key IT Requirement of GLBA/GLB
B	**Solve any One** **10 marks each**
i.	How Criminal Plan the Attack? Explain various steps

ii.	Explain E-Contracts. Discuss E-Contracts Act 1872.

Q3. **(20 Marks)**	
A	**Solve any Two** **5 marks each**
i.	Explain Bluetooth Hacking with various tools
ii.	Explain Vishing, Phishing and Smishing in Cyber Security
iii.	Explain Key IT Requirement of FISMA
B	**Solve any One** **10 marks each**
i.	Explain how Intellectual Property Laws protect the rights of the owner of the Intellectual Property
ii.	Explain Key features of Indian Information Technology Act 2000.

University of Mumbai

Examination 2020 under cluster ALL (Lead College:)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **ALL_Institute Level Optional Course 1**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ILO 7018 and Course Name: EAM

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Energy that is available in market for definite price is known as
Option A:	Renewable energy
Option B:	Commercial energy
Option C:	Non-commercial energy
Option D:	Traditional energy
2.	As per the report "BP Statistical Review of World Energy-2014", for how many years the coal reserve in India available for energy production?
Option A:	500
Option B:	300
Option C:	100
Option D:	200
3.	Which source of energy dominates the energy production mix in India?
Option A:	Natural gas
Option B:	Coal
Option C:	Oil
Option D:	Nuclear
4.	Assisting and implementing ENCON recommendation measures and monitoring the performance are done in
Option A:	Pre Audit phase
Option B:	Audit phase
Option C:	Post Audit phase
Option D:	Pre and Audit phase
5.	The height of a column in a pump is called as
Option A:	Horizontal head
Option B:	Static head
Option C:	Multi head
Option D:	Vertical head
6.	What covers study of Variations occurring in energy costs, availability and reliability of supply of energy, energy mix, identify energy conservation technologies, retrofit for energy conservation equipment.
Option A:	Performance assessment

Option B:	Energy Audit
Option C:	Energy reliability
Option D:	Energy planning
7.	Which type of audit offers the most accurate estimate of energy savings and cost?
Option A:	Preliminary Audit
Option B:	Detailed Audit
Option C:	Overall Audit
Option D:	Secondary Audit
8.	Obtaining site drawings like building layout, steam, air distribution, electricity distribution are performed in which phase of audit?
Option A:	Post Audit phase
Option B:	Pre Audit phase
Option C:	Audit phase
Option D:	In between Pre and Post Audit phase
9.	Power factor can be improved by connecting which among these?
Option A:	Semiconductor device
Option B:	Resistors
Option C:	Inductor
Option D:	Static capacitors
10.	Fixed charge and Variable charge are dependent on what factor for HT consumer?
Option A:	Average load ,Energy consumption
Option B:	Energy consumption, Maximum Demand
Option C:	Maximum demand, Energy Consumption
Option D:	Maximum demand ,Peak load demand
11.	Energy savings potential of variable torque applications compared to constant torque application is:
Option A:	Higher
Option B:	Equal
Option C:	Lower
Option D:	Does not depend on Torque
12.	Electronic soft starters are used for motors to:
Option A:	improve the loading
Option B:	provide smooth start and stop
Option C:	achieve variable speed
Option D:	provide jerk during starting
13.	For large space lighting we prefer
Option A:	Time based control
Option B:	day light based controllers
Option C:	Localized Switching
Option D:	Photo sensors
14.	Formation of bubbles in an impeller is called
Option A:	Cavitation

Option B:	Defects
Option C:	Friction
Option D:	Heat burn
15.	If no instrument other than tachometer is available, what method you would suggest for measuring the motor load?
Option A:	Slip method
Option B:	Input power measurement method
Option C:	Line current measurement method
Option D:	Terminal voltage method
16.	In lighting performance assessment ILER stands for
Option A:	International Lighting Energy Regulation
Option B:	Indian Lighting Efficiency Regulation
Option C:	Installed Load Efficacy Ratio
Option D:	Interior Lighting Energy Ratio
17.	To have lighting performance assessment satisfactory to good, ILER value must be
Option A:	0.75 and above
Option B:	0.5 and less
Option C:	between 0.25 to 0.5
Option D:	below 0.25
18.	Which LEED rating system requires durability?
Option A:	LEED for Schools
Option B:	LEED for Commercial Interiors
Option C:	LEED for Homes
Option D:	LEED for Existing Buildings: Operation and Maintenance
19.	Photovoltaic cell converts solar energy into
Option A:	Heat energy
Option B:	Electric energy
Option C:	Mechanical energy
Option D:	Chemical energy
20.	Which insulation material is used for high temperatures
Option A:	Magnesia
Option B:	Polyurethane
Option C:	Expanded Polystyrene
Option D:	Calcium Silicate

Q2	
A	**Solve any Two** **5 marks each**
i.	Explain any FIVE special features of green building.
ii.	Explain advantages of power factor improvement.
iii.	A pump is filling water in to a rectangular overhead tank of 5 m x 4 m with a height of 8 m. The inlet pipe to the tank is located at height of 20 m above ground. Pump suction : 3 m below pump level Overhead tank overflow line : 7.5 m from the bottom of the tank Power drawn by motor : 5.5 kW Motor efficiency η : 92% Time taken by the pump to fill the overhead tank up to overflow level : 180 minutes. Find the pump efficiency.
B	**Solve any One** **10 marks each**
i.	What is the need of energy audit and explain types of energy audit.
ii.	Describe General fuel economy measures in furnaces

Q3	
A	**Solve any Two** **5 marks each**
i.	Explain Benchmarking and its types.
ii.	A 7.5 kW, 415 V, 15 A, 970 RPM, 3 phase rated induction motor with full load efficiency of 86 % draws 7.5 A and 3.23 kW of input power. Find the percentage loading of the motor.
iii.	Explain what is thermal insulations and its benefits.
B	**Solve any One** **10 marks each**
i.	Describe energy saving opportunities in water pumps.
ii.	Explain energy conservation opportunities in lighting controls.

University of Mumbai

Examination 2020 under cluster ALL(Lead College: VCET)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **ALL_Institute Level Optional Course 1**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ILO 7011 and Course Name: Product Life Cycle Management

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	_____ is not a phase under product life cycle management
Option A:	Introduction
Option B:	Growth
Option C:	Maturity
Option D:	Rotation
2.	In _____ phase extensive advertisement is needed for product promotion
Option A:	Introduction
Option B:	Growth
Option C:	Maturity
Option D:	Decline
3.	In _____ phase profit level reaches to its maximum peak
Option A:	Introduction
Option B:	Growth
Option C:	Maturity
Option D:	Decline
4.	In_____ phase product sales reaches to minimum and profit is also lowest
Option A:	Introduction
Option B:	Growth
Option C:	Maturity
Option D:	Decline
5.	_____ is not a benefit of PLM
Option A:	Product life cycle analysis
Option B:	Profit maximization
Option C:	Decision making
Option D:	Large investment
6.	In _____ design model approach simultaneous and interlinked design activities are carried out
Option A:	Integrated
Option B:	Individual
Option C:	Isolated
Option D:	Dual

7.	_____ engineering is also called as simultaneous engineering.
Option A:	Concurrent
Option B:	Combine
Option C:	Linear
Option D:	Parallel
8.	_____ emphasizes the multidisciplinary approach in the product development process
Option A:	Concurrent engineering
Option B:	Dual engineering
Option C:	Rotational Engineering
Option D:	Realistic engineering
9.	_____ is not a step under new product development.
Option A:	Idea generation
Option B:	Concept development
Option C:	Idea screening
Option D:	Sensitivity analysis
10.	In ____ product is customized according to the customer wishes and product prepared as per specific requirement of customer.
Option A:	Product configuration
Option B:	Product rotation
Option C:	Product division
Option D:	Product linearization
11.	PDM stands for ____
Option A:	Product Data Management
Option B:	Product Development Management
Option C:	Product Dispatch Management
Option D:	Product Distinct Manament
12.	_____ is not the benefit of PDM
Option A:	It centralizes and control data
Option B:	It removes unnecessary data
Option C:	It improves data management
Option D:	It increases cost and time
13.	_____ is not the feature of PDM
Option A:	It facilitates better use of resources
Option B:	Engineering changes can be controlled easily
Option C:	Lead time gets reduced
Option D:	Consumes more time and resources
14.	_____ is not the component of virtual product development
Option A:	Virtual product design
Option B:	Virtual simulation
Option C:	Digital manufacturing
Option D:	Supply chain management

15.	DMU stands for _____
Option A:	Digital Mock up Unit
Option B:	Digital Manufacturing Unit
Option C:	Digital Maintenance Unit
Option D:	Differential Manufacturing Unit
16.	_____ is a realistic rendering technique of creating an image by tracing the path of light
Option A:	Ray tracing
Option B:	Ray casting
Option C:	Radiosity
Option D:	Radiography
17.	DFE stands for ____
Option A:	Design for excellence
Option B:	Design for efficiency
Option C:	Design for environment
Option D:	Design for economy
18.	DFE focuses on _____ factor
Option A:	Economy
Option B:	Energy
Option C:	Efficiency
Option D:	Environment
19.	LCA stands for _____
Option A:	Life Cycle Assessment
Option B:	Life Cycle Analysis
Option C:	Life Cycle Assembly
Option D:	Life Cycle Achievement
20.	LCCA stands for
Option A:	Life Cycle Class Achievement
Option B:	Life Cycle Creative Assessment
Option C:	Life Cycle Combine Assessment
Option D:	Life Cycle Cost Analysis

Q2 **(20 Marks)**	**Solve any Four out of Six 5 marks each**
A	*Explain product data management in detail.*
B	*Explain virtual product development tools in detail.*
C	*Explain the concept of sustainable development.*
D	Explain virtual manufacturing in detail.
E	*Explain product data management along with its advantages.*
F	*Explain the framework of life cycle assessment*.

Q3. **(20 Marks)**	**Solve any Two Questions out of Three 10 marks each**
A	*Explain life cycle phases in detail.*

B	*Explain product life cycle strategies in brief.*
C	*Explain various product development tools in detail.*

University of Mumbai

Examination 2020 under cluster ALL(Lead College: VCET)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **ALL_Institute Level Optional Course 1**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ILO 7019 and Course Name: Development Engineering

Time: 2 hour Max. Marks: 80

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0701_R16_ALL_VII_ILO7019_QP1

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Which of the following was the first committee on Panchayati raj in India
Option A:	Balwant Rai Mehta
Option B:	Ashok Mehta
Option C:	L.M.Singhvi
Option D:	S. Mohinder Singh
2.	When is National Panchayati Day celebrated
Option A:	23rd December
Option B:	1st June
Option C:	24th April
Option D:	15th September
3.	73rd amendment gave practical shape to which article of the constitution
Option A:	Article 14
Option B:	Article 32
Option C:	Article 40
Option D:	Article 51
4.	The multi-dimensional poverty index is a measure developed by the
Option A:	UNCTAD
Option B:	World Bank
Option C:	International Monetary Fund IMF
Option D:	Oxford poverty and human development initiative , OPHDI , and the UNDP
5.	Which of the following system is established on the basis of direct election
Option A:	Gram Panchayat
Option B:	Block Committee
Option C:	Zila Parishad
Option D:	District
6.	Engagement of local people in development project refers to
Option A:	Economic development
Option B:	Socila development
Option C:	Participatory development
Option D:	Sustainable development

7.	Panchayats are constituted for
Option A:	four years
Option B:	five years
Option C:	six years
Option D:	three years
8.	Bread labour means
Option A:	To earn one's livelihood by engaging in manual labour
Option B:	Hard physical labour
Option C:	Labour for making bread
Option D:	Engaging in agriculture
9.	The Human Development Index ranks the countries based on their performance in the key areas of (1) health, (2) sex-ratio, (3)education (4) access to resources
Option A:	1,2,3
Option B:	2,3,4
Option C:	1,3,4
Option D:	1,2,4
10.	Which one of the following is not a correct statement ?
Option A:	Growth is quantitative and value neutral
Option B:	Development means a qualitative change which is always value positive
Option C:	Positive growth and development refer to changes over a period of time
Option D:	Both growth and development refer to changes over a period of time.
11.	Which of the following elements must always be in the mind of the engineer while performing his duties vis-à-vis Ethics (1)public safety, (2) economy, (3) health, (4) welfare
Option A:	1,2,3
Option B:	1,2,3,4
Option C:	1,4
Option D:	1,3,4
12.	According to Gandhi, ' Enjoy the wealth by renouncing it'is the essence of
Option A:	Trusteeship
Option B:	Sarvodaya
Option C:	Swaraj
Option D:	Ramarajya
13.	The term that refers to principles, values, beliefs that define right or wrong behaviour is
Option A:	Customer satisfaction
Option B:	Innovation
Option C:	Ethics
Option D:	Empowerment
14.	In which five year plan the Panchayat Raj System was introduced in India for the first time
Option A:	First

Option B:	Second
Option C:	Fifth
Option D:	Sixth
15.	Which of the following is an appropriate general principle with regard to engineering ethics
Option A:	The engineer shall regard his duty to the public welfare as paramount to all other obligations
Option B:	The engineer shall regard his duty to the objectives of the company as paramount to all other obligations
Option C:	The engineer shall regard his duty to the Profession of engineering as paramount to all other obligations
Option D:	The engineer shall regard his duty to his excellence as paramount to all other obligations
16.	Those individuals who raise ethical concerns to others inside or outside the organisation are called
Option A:	Entrepreneur
Option B:	Whistle blower
Option C:	Social entrepreneur
Option D:	Social impact management
17.	Which of the following is not a key intervention to improve governance
Option A:	Facilitating independent and inclusive journalism
Option B:	Capacity building of government officials
Option C:	Advocacy for policy design and implementation
Option D:	Employment for all
18.	Which of the following is not in the 11^{th} schedule of subjects
Option A:	Fisheries industry
Option B:	Safe drinking water
Option C:	Markets and fairs
Option D:	Large irrigation projects
19.	The following is not a stated objective of Self Help Groups
Option A:	Provide employment to the members
Option B:	Create awareness about rights
Option C:	Foster a sense of community
Option D:	Entrepreneurship development
20.	Those individuals who raise ethical concerns to others inside or outside the organisation are called
Option A:	Entrepreneur
Option B:	Whistle blower
Option C:	Social entrepreneur
Option D:	Social impact management

Q2	Solve any Four out of Six 5 marks each
A	Explain the provisions of the 74th amendment
B	What is the scope of information and communication technology in rural India
C	Define ethics and ethical dilemma
D	What are the important components of Green Revolution
E	What are the various steps taken for inclusion of women and the members of the reserved category in decision making
F	Why was there a need to set up rural co-operatives

Q3	Solve any Four out of Six 5 marks each
A	Briefly discuss the various rural development schemes in India
B	What is the importance of ethical conduct in business
C	Human Development Index is a barometer of a nation's progress- Comment on this while giving specific examples to prove your point
D	What are self help groups (SHG)? Explain their significance in rural development
E	Discuss any 2 initiatives of the Government of India towards urban development
F	What are the functions of Panchayat Samiti

University of Mumbai
Examination 2020 under cluster ALL (Lead College: VCET)

Program: **ALL_Institute Level Optional Course 1**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO 701**7**
Course Name: Disaster Management and Mitigation Measures
Time: 2 hour Max. Marks: 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Which of the following is NOT occurred as a consequence of earthquake
Option A:	Tsunami
Option B:	Fire
Option C:	Damage to building
Option D:	Drought
2.	Which of the following is NOT the natural cause of flood .
Option A:	River bank erosion
Option B:	Poor natural drainage
Option C:	Heavy rain
Option D:	Deforestation
3.	Terrorism is a _____type of disaster
Option A:	Man made
Option B:	Natural
Option C:	Both natural and man made
Option D:	Neither natural nor man made
4.	World Health Organization (WHO) was established in
Option A:	1950
Option B:	1948
Option C:	1947
Option D:	1960
5.	Who heads NDMA, the apex body for Disaster management
Option A:	Home Minister
Option B:	Finance Minister
Option C:	Prime Minister
Option D:	Home Secretary
6.	Which of the following is a disaster mitigation strategy?
Option A:	Constructing cyclone shelters

Option B:	Giving loans from banks
Option C:	Providing cheap electricity
Option D:	Providing school uniforms to children
7.	Which of the following organization is the apex authority of disaster management in India?
Option A:	NDA
Option B:	NDMA
Option C:	CDMA
Option D:	INDR
8.	If the deficiency of a particular year's rainfall more than 50 % of normal it is termed as
Option A:	Onset of Drought
Option B:	Moderate Drought
Option C:	Severe Drought
Option D:	Simple Drought
9.	Magnitude of earthquake indicates amount of _____.
Option A:	vibrations per second
Option B:	vibrations per minute
Option C:	Oscillations
Option D:	energy released
10.	By which Act, N.I.D.M got the statutory organization status?
Option A:	National Disaster Policy Act 1999
Option B:	NDMP 2019
Option C:	Disaster Management Act 2005.
Option D:	National DM Policy 2009
11.	Amateur Radio is also known as?
Option A:	Ham radio
Option B:	Home radio
Option C:	Pocket radio
Option D:	Silent radio
12.	What are the three phases of disaster management planning?
Option A:	Preparation, Response and Recovery
Option B:	Preparation, Planning and Perception
Option C:	Evacuating, Rebuilding and Re-branding
Option D:	Planning, Evacuating and Recovery
13.	Cyclones, Heat wave , Climate change are part of _____disaster.
Option A:	The Geological Disaster
Option B:	The Hydrological Disasters
Option C:	The Meteorological Disasters
Option D:	The Chemical Disaster

14.	The Indian Tsunami Early Warning Centre (ITEWC) established at Indian National Centre for Ocean Information Sciences is located in
Option A:	Chennai
Option B:	Kochi
Option C:	Goa
Option D:	Hyderabad
15.	In _____ in 2013 cloudburst created the flash flood situation to cause heavy damage to lives and property.
Option A:	Uttarakhand
Option B:	Chennai
Option C:	Kashmir
Option D:	Karnataka
16.	When was the updated & revised National Disaster Management Plan was prepared?
Option A:	2016
Option B:	2019
Option C:	2018
Option D:	2017
17.	Which of the following is the best thing to do during heavy lightning?
Option A:	lie on the ground in an open place
Option B:	Go into a water body
Option C:	Stay indoors, away from metallic doors and windows
Option D:	Stand under a tall tree
18.	The given three actions are arranged for which step i) The planning ii) The training and iii) The supply
Option A:	The prevention step
Option B:	Recovery step
Option C:	The preparation step
Option D:	The recovery step
19.	The Vision of _____ is “To build a safer and disaster resilient India by a holistic proactive technology driven and sustainable development strategy that involves all stake holders and fasters a culture of Prevention, preparedness and Mitigation.
Option A:	N.D.R.F
Option B:	N.D.M.A
Option C:	S.D.R.F
Option D:	N.I.D.M
20.	S.D.R.F Stands for
Option A:	State Disaster Response Fund
Option B:	State Disaster Relief Fund
Option C:	State Dedicated Relief Fund
Option D:	State Dynamic Response Fund

Q2	**Solve any Four out of Six** **5 marks each**
A	State and describe the measures to prevent the global warming.
B	Define "Nuclear Disaster "and describe the effects of Nuclear disasters in India
C	What are the long term and short-term effects of disaster?
D	What are the main phases of Disaster Management?
E	Describe the importance and the methods to create public awareness in Disaster management?
F	Explain the role of Government Agencies in Relief fund raising for Disaster management.

Q3.	**Solve any Two Questions out of Three** **10 marks each**
A	Write detail note on occurrence, causes and measurement of earthquake. List out some of the major earthquakes occurred in India
B	Explain the role of NGO's in post disaster scenario and during rehabilitation.
C	State Do's and Don'ts in case of various disasters.

University of Mumbai

Examination 2020 under cluster ALL(Lead College: VCET)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **ALL_Institute Level Optional Course 1**

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: ILO 7012 and Course Name: Reliability Engineering

Time: 2 hour Max. Marks: 80

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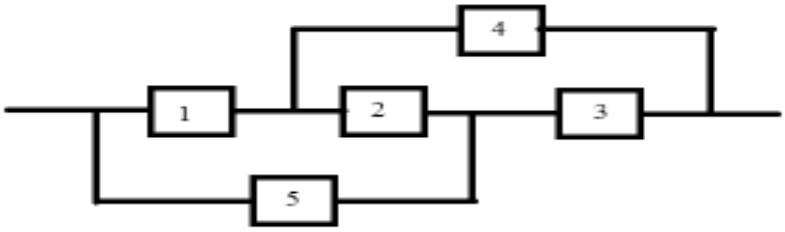
Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	The Bathtub curve indicates failure probability, Which stage is NOT normally associated with the bathtub curve?_____
Option A:	Pulling the plug where production is halted due to unacceptable level of failures
Option B:	Infant-mortality where failures occur early
Option C:	Wear-out where failure increases due to age
Option D:	Normal-life where few failures occur
2.	Three components each with a reliability of 0.9 are placed in series. What is the reliability of the system ?
Option A:	0.729
Option B:	0.125
Option C:	0.00258
Option D:	0.989
3.	. If A is a perfect subset of B and P(a) < P(b), then P(B - A) is equal to _____
Option A:	P(a) / P(b)
Option B:	P(a) P(b)
Option C:	P(a) + P(b)
Option D:	P(b) - P(a)
4.	In order to maintain maintainability in the system, repair time must _____
Option A:	be increased
Option B:	be reduced
Option C:	kept constant
Option D:	keeps on changing
5.	What refers to wear out failure_____.
Option A:	Depends upon the subject
Option B:	Depends upon type of the experiment
Option C:	Increasing failure rate
Option D:	Decreasing failure rate
6.	Find median and mode of the messages received on 9 consecutive days 15,11,9, 5,18,4,15,13,17.
Option A:	13,6
Option B:	13,18

Option C:	18,15
Option D:	15, 16
7.	The reliability of a device comprised of various parts functioning in series is the :
Option A:	Product of the reliabilities
Option B:	Sum of the probabilities of the unreliabilities
Option C:	Product of the unreliabilities
Option D:	Sum of the reliabilities
8.	Which among the following exhibits inversely proportional relationship with the reliability?
Option A:	Production cost
Option B:	Maintenance and repair cost
Option C:	Design and development cost
Option D:	Availability
9.	If 'm' is the mean of a Poisson Distribution, then variance is given by _____
Option A:	m^2
Option B:	$m^{1/2}$
Option C:	m
Option D:	$\frac{m}{2}$
10.	Which of the following is not considered a reliability design method_____.
Option A:	Parts selection
Option B:	Choice of technology
Option C:	Accessibility
Option D:	Derating
11.	Markov analysis is a technique that deals with the probabilities of future occurrences by_____.
Option A:	Using Bayes' theorem
Option B:	Analyzing presently known probabilities
Option C:	Time series forecasting
Option D:	The maximal flow technique
12.	Skewness of Normal distribution is _____
Option A:	Negative
Option B:	Positive
Option C:	0
Option D:	Undefined
13.	The design function which assigns probability of failures between components or subsystems is called:
Option A:	Significance
Option B:	Prediction
Option C:	Qualification
Option D:	Apportionment
14.	What is MTTR

Option A:	Mean Time To Restore
Option B:	Mean Time To Repair
Option C:	Mean Time To Recovery
Option D:	Mean Time to Restoration
15.	The inherent availability can be calculated for repairable system as:
Option A:	$A_I = \frac{MTBF}{MTTF + MTTR}$
Option B:	$A_I = \frac{MTTF}{MTTF + MTTR}$
Option C:	$A_I = \frac{MTTF}{MTBF + MTTR}$
Option D:	$A_I = \frac{MTTR}{MTTF + MTTR}$
16.	Three companies A, B and C supply 25%, 35% and 40% of the notebooks to a school. Past experience shows that 5%, 4% and 2% of the notebooks produced by these companies are defective. If a notebook was found to be defective, what is the probability that the notebook was supplied by A?
Option A:	44⁄69
Option B:	25⁄69
Option C:	13⁄24
Option D:	11⁄24
17.	What would happen, if an equipment possesses reliability and maintainability to the maximum extent in accordance to MTTR?
Option A:	Failure rate is higher & downtime is longer
Option B:	Failure rate is lower & downtime is longer
Option C:	Failure rate is higher & downtime is shorter
Option D:	Failure rate is lower & downtime is shorter
18.	All fault-tolerant techniques rely on
Option A:	Integrity
Option B:	Dependability
Option C:	Redundancy
Option D:	Reliability
19.	What is the Major Key parameter of maintainability?
Option A:	Accessibility
Option B:	Vulnerability
Option C:	RCS
Option D:	Survival
20.	Which of the following is the biggest impact of availability
Option A:	mean time
Option B:	median time
Option C:	downtime
Option D:	maximum time of repair

Q2	**Solve any Four out of Six** **5 marks each**
A	Tests performed on a self-diagnostic module for a complex electronic system resulted in correct diagnostics of a known fault 98% of time with only a 1% false reading when it was known there were no faults present. The Probability of a failure (fault) occurring over the test period is 0.005. How reliable is the self-diagnostic module?
B	Consider the system below. Do the following a) Assume that all componentsare identical and independent, and have a reliability R(t). Find the expression for the system reliability. b) Assume the components have exponentially distributed failure times with parameter λ. Develop an expression for the failure rate of the system $\lambda_s(t)$. 
C	Explain measures of Availability.
D	Obtain reliability of Parallel system containing of n components, when the reliability of each component is known. Assume that the units are non-repairable.
E	Explain the Failure Mode Effects analysis
F	Explain Reliability Block Diagram with example

Q3	**Solve any Two out of Three** **10 marks each**
A	ExplainBath Tub Curve, Hazard rate, failure density and Failure Rate with help of suitable example
B	It is known that 5% of the book bound at a certain bindery have defective bindings. Find the probability that 2 of 100 books bound by this bindery will defective binding using the Poisson approximation to the binomial distribution.
C	Explain Reliability Improvement methods with suitable example