K. J. Somaiya Institute of Engineering and Information Technology
Sion, Mumbai - 400022
NAAC Accredited Institute with 'A' Grade
NBA Accredited 3 Programs (Computer Engineering, Electronics & Telecommunication Engineering and Electronics Engineering) Permanently Affiliated to University of Mumbai

EXAMINATION TIME TABLE (June 2021)
PROGRAMME - B.E. (Information Technology)(REV-2016) (Choice Based)
SEMESTER - VII

Days and Dates	Time	Course Code	Paper
Tuesday, June 15, 2021	03:30 p.m. to 05:30 p.m.	ITC701	Enterprise Network Design
Thursday, June 17, 2021	03:30 p.m. to 05:30 p.m.	ITC702	Infrastructure Security
Saturday, June 19, 2021	03:30 p.m. to 05:30 p.m.	ITC703	Artificial Intelligence
Tuesday, June 22, 2021	03:30 p.m. to 05:30 p.m.	ITDLO7031	Department Level Optional Course -III: Storage Area Networks
Tuesday, June 22, 2021	03:30 p.m. to 05:30 p.m.	ITDLO7032	Mobile Application Development
Tuesday, June 22, 2021	03:30 p.m. to 05:30 p.m.	ITDLO7033	High Performance Computing
Tuesday, June 22, 2021	03:30 p.m. to 05:30 p.m.	ITDLO7034	Software Testing & Quality Assurance
Tuesday, June 22, 2021	03:30 p.m. to 05:30 p.m.	ITDLO7035	Soft Computing
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7011	Institute Level Optional Course-I :- Product Life Cycle Management
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7012	Reliability Engineering
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7013	Management Information Systems
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7014	Design of Experiments
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7015	Operations Research
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7016	Cyber Security & Laws
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7017	Disaster Management & Mitigation Measures
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7018	Energy Audit & Management
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ILO7019	Development Engineering

Important Note: ●Change if any, in the time table shall be communicated on the college web site.

Principal

Mumbai
20th May, 2021

Examinations Commencing from 15th June 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

==

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which layer of the Cisco SONA Architecture is responsible for providing Security and identity services.
Option A:	Interactive Services layer
Option B:	Networked Infrastructure layer
Option C:	Transport Layer
Option D:	Application Layer
2.	Organization has implemented Reactive Fault Management system, which is capable of fault detection and correction. Which phase of PPDIOO life cycle is the organization currently in.
Option A:	Prepare
Option B:	Design
Option C:	Optimize
Option D:	Implement
3.	Of the following which is not the benefit of the Top Down Approach of Network Design.
Option A:	Since the Business requirements are gathered from Top Management incorporating the customer organization's business requirements is possible.
Option B:	Selecting the devices and technologies and then identifying the services and applications allow fast deployment of solution to a request by customer.
Option C:	Since the Network Designer is aware of the business goals, technical goals and various constraints– the network designer has the "big picture" of organization while designing the network.
Option D:	Network is designed by considering not only the current but future requirements.
4.	Of the following which is not the service provided by the Internet Connectivity function of the Enterprise Edge Network
Option A:	Internet and the intranet mail services
Option B:	External and Internal Domain Name Service
Option C:	Basic filtering and multilayer connectivity to the Internet through Edge Routers.
Option D:	Terminate dial-in connections and authenticate individual remote users

5.	_____ is the message sent by the SNMP Agent to SNMP Manager when change in the state of a device, a device or component failure
Option A:	Get Request
Option B:	InformRequest
Option C:	Trap
Option D:	Set Request
6.	Of the following at which layer RMON1 can be used for network monitoring.
Option A:	Network Layer
Option B:	Data Link Layer
Option C:	Application Layer
Option D:	Session Layer
7.	Of the following statements which is FALSE
Option A:	Device Redundancy can ensure high – availability but increase the cost of implementation.
Option B:	Business goal and technical goals of the organization play no role in designing the strategy for redundancies.
Option C:	Attachment through a redundant transceiver is a way to improve availability of Server Farm
Option D:	Route redundancy helps to minimize the effect of link failure.
8.	IP Phone Calls is an example of _____ Application.
Option A:	Client–local server
Option B:	Client–Server Farm
Option C:	Peer-Peer
Option D:	Client–Enterprise Edge server
9.	The 80/20 rule for client/server applications says that_____
Option A:	20 percent of the traffic is local to the LAN segment and 80 percent leaves the segment.
Option B:	80 percent of the traffic is local to the LAN segment and 20 percent leaves the segment.
Option C:	80 percent of the traffic is local to the LAN segment and 80 percent leaves the segment.
Option D:	20 percent of the traffic is local to the LAN segment and 20 percent leaves the segment.
10.	Which one of the following supports end-to-end QOS for network Traffic.
Option A:	Integrated Services

Option B:	Bandwidth Optimization
Option C:	Congestion Control Mechanism
Option D:	Best effort Delivery
11.	Which one of the following architecture design support functions of Core and Distribution layers combined in to a single layer for small campus network.
Option A:	Cisco SONA Architectural Framework
Option B:	Collapsed Core Architecture
Option C:	3 layered - Hierarchical network Architecture
Option D:	Non-Collapsed Core Architecture
12.	Asynchronous transfer mode uses _____
Option A:	Packet Switching technology
Option B:	Circuit Switching technology
Option C:	Cell Switching technology
Option D:	Message switching technology
13.	What is IPsec ?
Option A:	A tunnel encapsulation and a security protocol
Option B:	Evasdroping protocol
Option C:	Network Monitoring protocol
Option D:	Mapping IP address to Mac address protocol.
14.	What is the use of Real-Time Transport Protocol?
Option A:	Carry packetized Audio and video traffic over Circuit Switched Network.
Option B:	Carry Network Management information over an IP network.
Option C:	Carry control messages over an cell network.
Option D:	Carry packetized Audio and video traffic over an IP network.
15.	Which are valid ways of writing the following IPv6 address: 3103:0000:256C:0000:0000:08T5:0001:009F?
Option A:	3103:: 256C:0:0: 8T5:1: 9F
Option B:	3103:: 256C:: 08T5:1:009F
Option C:	3103:0: 256C: 8T5:1: 9F
Option D:	3103:0: 256C:: 08T5:1:009F
16.	An enterprise Teleworker gadget or machine will be assigned a _____.
Option A:	Private Address
Option B:	Public Address

Option C:	Private and Public Address
Option D:	Primary Address
17.	_____ is used for address to name resolution
Option A:	DHCP
Option B:	NAT
Option C:	DNS
Option D:	ATN
18.	In class A, the host Id is ----------- number of bits
Option A:	16
Option B:	24
Option C:	8
Option D:	10
19.	The _____ interface is defined as the connection between the controller and the applications
Option A:	EastBound API
Option B:	SouthBound API
Option C:	NorthBound API
Option D:	WestBound API
20.	The basic difference between traditional networks and enterprise networks is
Option A:	Intelligence
Option B:	Feasibility
Option C:	Throughput
Option D:	Speed

Q2 (20 Marks)	
A	**Solve any Two** **5 marks each**
i.	*What are Application Requirements of WAN design.*
ii.	*What are different types of redundancies that are used in Enterprise Network Design ? Explain any two redundancies in detail.*
iii.	Draw and explain the PPDIOO network life cycle.
B	**Solve any One** **10 marks each**
i.	*With reference to the architectural diagram, differentiate between the traditional and SDN network. Also specify the drawbacks of traditional Networks*
ii.	*With the help of diagram illustrate the deployment of various routing protocols in Enterprise Architecture.*

Q3 (20 Marks)	
A	**Solve any Two** **5 marks each**
i.	Write short notes on Open flow in cloud computing
ii.	An organization has mission-critical applications hosted on common servers that are accessible to only top level managers throughout the organization's multiple buildings.Where and how would you recommend that these servers be placed within the network?
iii.	Explain the IPv4 to IPv6 Transition Strategies
B	**Solve any One** **10 marks each**
i.	Write short note on: Enterprise Branch Design Considerations
ii.	An organization has a computer terminal with the IP address 208.10.10.101 and subnet mask of 255.255.255.240 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 255.255.255.192 then how many subnets can be formed?

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)

Examinations Commencing from 15th June 2021
Program: **INFORMATION TECHNOLGY**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ITC701 and Course Name: Enterprise Network Design

Time: 2 hour   Max. Marks: 80

==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	B
Q4	D
Q5	C
Q6	B
Q7	B
Q8.	C
Q9.	B
Q10.	A
Q11.	B
Q12.	C
Q13.	A
Q14.	D
Q15.	D
Q16.	A
Q17.	C
Q18.	B
Q19.	C
Q20.	A

Examinations Commencing from 15th June 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

===
===
=

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which of the following is known as authentication methods types
Option A:	use of tokens
Option B:	use of fingerprints
Option C:	use of passwords
Option D:	use of signature
2.	How to accomplish authorization.
Option A:	Restrict what operations/data the user can access
Option B:	Determine if the user is an attacker
Option C:	Flag the user if he/she misbehaves
Option D:	Determine who the user is
3.	Which malicious code works in background and steals sensitive data?
Option A:	Trojan
Option B:	Virus
Option C:	Worms
Option D:	Shareware
4.	From following which type of rootkit will patch, hook, or replace the version of system call to hide information?
Option A:	Library level rootkits
Option B:	Kernel level rootkits
Option C:	System level rootkits
Option D:	Application level rootkits
5.	In cross-site scripting where does the malicious script execute?
Option A:	On the web server
Option B:	In the user's browser
Option C:	On the attacker's system
Option D:	In the web app model code

6.	Fencing technique refers to-
Option A:	A technique that assigns properties, using several markings, to each memory address
Option B:	A technique that used two registers to divide the memory and can be used in a multi-user OS environment
Option C:	A technique in which memory is divided in two parts – one for OS and one for the user
Option D:	A technique which divides physical memory into virtual memory address pages
7.	_____ is a security service in cloud that provides a way for cloud users to monitor how their data is accessed and is critical for compliance enforcement.
Option A:	Secure Data Access
Option B:	Data Confidentiality Assurance
Option C:	Data Integrity Protection
Option D:	Service Audition
8.	Which one of the following is not an approach to limit the damage caused by a successful exploitation for cloud application.
Option A:	Sandboxing
Option B:	Security Information and event monitoring
Option C:	Single Sign On
Option D:	Backup
9.	_____ is designed to work with native applications not just in web browser
Option A:	SAML
Option B:	OAuth
Option C:	Identity Management
Option D:	Managed Security Services.
10.	In GSM Security related information like A3/A8 algorithm are stored on
Option A:	SIM
Option B:	Mobile Data Card
Option C:	Base Station Subsystem
Option D:	Mobile RAM
11.	Which database is used to store A3,A5 & A8 security algorithms in GSM architecture.
Option A:	Authentication Center (AuC)
Option B:	Equipment Identity Register (EIR)
Option C:	Visitor Location Register (VLR)
Option D:	Home Location Register(HLR)
12.	Define Side Channel attack (which is also known as Partitioning attack)
Option A:	Attacker is able to disable the connection between mobile station and the base station subsystem
Option B:	Attacker is able to partition the MSSC

Option C:	Attacker can use a false BTS same as users network and impersonate himself/herself.
Option D:	Attacker is capable of extracting Ki even if he/she has access to SIM for a minute.
13.	_____ manages its elements within the network by communicating with other areas of network .
Option A:	Mobile Switching Centre
Option B:	Serving GPRS Support Node
Option C:	Gateway Mobile Switching Centre
Option D:	Gateway GPRS Support Node
14.	Web server will log which part of a GET request?
Option A:	Hidden tags
Option B:	Query Strings
Option C:	Header
Option D:	Cookies
15.	A Web site that allows users to enter text, such as a comment or a name, and then stores it and later displays it to other users, is potentially vulnerable to a kind of attack called a _____ attack.
Option A:	Two-factor authentication
Option B:	Cross-site request forgery
Option C:	Cross-site scripting
Option D:	Cross-site scoring scripting
16.	The URL of the page that had the link that the user clicked to access the page is called as _____
Option A:	Source
Option B:	Linker
Option C:	Leaker
Option D:	Referrer
17.	At the lower layer of SSL, a protocol for transferring data using a variety of predefined cipher and authentication combinations called the………………..
Option A:	SSL handshake protocol
Option B:	SSL authentication protocol
Option C:	SSL record protocol
Option D:	SSL cipher protocol
18.	Controlling access to sensitive electronic information so only those with a legitimate need to access it are allowed to do so is known as?
Option A:	Privacy
Option B:	Ethics
Option C:	IT Security
Option D:	Availability

19.	When cookies are used as session identifiers, how are they then used as a potential security hazard?
Option A:	They emulate user's by downloading all the victims information onto a virtual machine
Option B:	User's cookies are altered to a virus-like state
Option C:	They emulate user's by stealing their personal identity
Option D:	Attackers emulate users by stealing their cookies
20.	Which languages are vulnerable to Cross Site Scripting attacks?
Option A:	C
Option B:	C#
Option C:	Perl
Option D:	VB

Q2	**Solve any Four out of Six**	**5 marks each**
A	Explain cross-site scripting attack and the role of Same Origin Policy.	
B	Illustrate VPN and different security protocols used in VPN	
C	Explain mandatory access control policy to achieve confidentiality of the data.	
D	Explain different risk analysis approaches.	
E	Explain Cloud Identity and Access Management	
F	Explain how security is achieved in E-mail using S-MIME protocol.	

Q3.	**Solve any Two Questions out of Three**	**10 marks each**
A	How can SSL protocols encounter the following mention attacks? Replay attack password sniffing in applications.	
B	Illustrate Oauth Authorization flow with example	
C	Explain the restricting access control rules stated in Bell-La-Padula model. Does this model achieve integrity or confidentiality or both, of the data? How?	

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)

Examinations Commencing from 15th June 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
==
==
=

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	A
Q3.	A
Q4	A
Q5	B
Q6	C
Q7	D
Q8.	C
Q9.	B
Q10.	A
Q11.	A
Q12.	D
Q13.	B
Q14.	B
Q15.	C
Q16.	D
Q17.	C
Q18.	C
Q19.	D
Q20.	C

Examinations Commencing from 15th June 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

===

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which of the following is not covered by AI?
Option A:	Linguistic
Option B:	Economics
Option C:	Philosophy
Option D:	Nature Drawing
2.	--- is a decision making strategy which seeks for ample solution rather than most favorable results.
Option A:	Satisficing
Option B:	Augmented intelligence
Option C:	Optimizing
Option D:	Pruning
3.	Which of the following sentence/s is/are true? I Rational agent not only do the said task but also learn from its percept history. II Rational agent thinks logically III Rational agent acts only based what he perceives.
Option A:	Only I
Option B:	I and II
Option C:	II and III
Option D:	Only II
4.	Consider an example of ALEXA, what kind of environment it required to perform well.
Option A:	Fully Observable, Deterministic, Episodic, Dynamic, Discrete
Option B:	Partially Observable, Stochastic, Episodic, Dynamic, Discrete
Option C:	Partially Observable, Stochastic, Sequential, Dynamic, Continuous
Option D:	Partially Observable, Stochastic, Sequential, Dynamic, Discrete
5.	For a Simulated annealing algorithm, for a very high value of T, the algorithm behaves like ---- and as T becomes 0, the behavior move towards ----
Option A:	Random Walk, Hill Climbing
Option B:	Hill Climbing, Random Walk
Option C:	DFS, Random Walk
Option D:	Tabu Search, Random Walk

6.	What is MINIMAX value of a game tree of Tic-Tac-Toe
Option A:	Win
Option B:	Draw
Option C:	Loose
Option D:	Withdraw
7.	Which statement is true: I- A* is complete and admissible II- A* search algorithm's time complexity is more than DFS III- A* search algorithm's time and space complexity depends on heuristic function
Option A:	I and II
Option B:	II and III
Option C:	I and III
Option D:	Only I
8.	Which of the following is the important property of CSP?
Option A:	Commutative
Option B:	Constraint propagation
Option C:	Forward checking
Option D:	Incremental
9.	Every rat has a tail, can be represented as
Option A:	$\exists x$ has (x, tail)
Option B:	$\forall x$ has (x, tail)
Option C:	$\exists x$ rat(x) $\rightarrow$ has (x, tail)
Option D:	$\forall x$ rat(x) $\rightarrow$ has (x, tail)
10.	The symbolization of a bidirectional implication is
Option A:	p $\rightarrow$ q
Option B:	p & q
Option C:	p v q
Option D:	p $\leftrightarrow$ q
11.	Which of the following is not a type of plan?
Option A:	Partial order
Option B:	Conditional
Option C:	Unconditional
Option D:	Hierarchical
12.	Which of the following is a feature of quantifiers?
Option A:	Universal quantifier is used to get exact number of entities.
Option B:	Neither Existential quantifier nor Universal quantifier give exact number of entities.
Option C:	Existential quantifier is negation of zero.
Option D:	Existential quantifier implies half the number of entities.
13.	For Air cargo transport problem, the precondition for Unload(x,y, Mumbai) is

Option A:	Load(x,y, Mumbai) and Fly(y, Mumbai, Mumbai)
Option B:	Load(x,y, Pune) and Fly(y, Pune, Mumbai)
Option C:	Load(y,x, Pune) and Fly(z, Pune, Mumbai)
Option D:	Load(y,x, Mumbai) and Fly(z, Mumbai, Mumbai)
14.	Plan for making lunch which includes Roti, Dal and Rice is
Option A:	Only Total order
Option B:	Only Partial order
Option C:	Combination of all types
Option D:	Only conditional
15.	Probabilities express _____
Option A:	the agent's inability to reach a definite decision regarding the truth of a sentence, and summarize the agent's beliefs.
Option B:	the agent's ability to reach a definite decision regarding the truth of a sentence, and summarize the agent's beliefs.
Option C:	the agent's inability to reach an indefinite decision regarding the truth of a sentence, and summarize the agent's beliefs.
Option D:	the agent's ability to reach an indefinite communication regarding the truth of a sentence, and summarize the agent's beliefs.
16.	BELIEF NETWORK represents
Option A:	Relation between outcomes
Option B:	the dependence between variables
Option C:	the dependence between outcomes
Option D:	Collection of outcomes
17.	Which of the following is an application of NLP
Option A:	Document clustering
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:	Pragmatic analysis
19.	Which of the following concepts make a system cognitive?
Option A:	Random learning
Option B:	Continuous learning from data across time
Option C:	Data cleaning
Option D:	Data extraction
20.	What types of problems are solved by supervised learning?
Option A:	Descriptive analysis problem
Option B:	Grouping of similar items
Option C:	Classification or regression problems
Option D:	Quantification

Q2.	Solve any Two Questions out of Three	10 marks each
A	What do you mean by Uninformed, Informed and Local Search Algorithms? Discuss the OPEN and CLOSED List as the algorithm DFS and BFS progresses.	

B	1. Convert the following to predicates: **6 marks**
	   a. Bina makes tea if she has honey otherwise makes coffee.
	   b. Coffee is a bitter drink.
	   c. Bina has honey.
	2. Will Bina make a bitter drink? Use backward reasoning. 4 **marks**	

C	Explain different components of Natural Language processing? Also, explain different levels of knowledge used in language understanding?	

Q3.	Solve any Two Questions out of Three	10 marks each
A	What is Constraint Satisfaction Problem? What would be the constraints for the crypto arithmetic problem described in below figure. Solve it. F O V E + X E V E N + F O V E ————————— M A O K U	
B	Plan and explain spare tire changing.	
C	Explain inferencing in Belief network with example.	

University of Mumbai
Examination 2021 under cluster ALL (Lead College: SSJCOE)

Examinations Commencing from 15th June 2021
Program: **INFORMATION TECHNOLGY**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ITC703 and Course Name: Artificial Intelligence

Time: 2 hour   Max. Marks: 80

==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	A
Q3.	B
Q4	B
Q5	A
Q6	B
Q7	C
Q8.	A
Q9.	D
Q10.	D
Q11.	C
Q12.	B
Q13.	B
Q14.	C
Q15.	A
Q16.	B
Q17.	A
Q18.	D
Q19.	B
Q20.	C

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)
Examinations Commencing from 15th June 2021
Program: **INFORMATION TECHNOLOGY**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ITDLO7031 and Course Name: SAN

Time: 2 hour   Max. Marks: 80

===

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Data centre infrastructure is used for
Option A:	centralized data processing & storage consolidation
Option B:	distributed data processing & storage division
Option C:	secured data processing & storage division
Option D:	secured data processing & storage consolidation
2.	two types of implementations on RAID are
Option A:	external & internal
Option B:	hardware & software
Option C:	maximum & minimum
Option D:	secured & unsecured
3.	the three basic components of the storage system are
Option A:	client, connectivity, storage
Option B:	server, network, storage
Option C:	host, connectivity, storage
Option D:	application, network, storage
4.	CHS address mapping mode is
Option A:	logical addressing type
Option B:	virtual addressing type
Option C:	secured addressing type
Option D:	physical addressing type
5.	_____ is an IP-based file-sharing device attached to a local area network
Option A:	DAS
Option B:	NAS
Option C:	SAN
Option D:	IP-SAN
6.	CIFS file sharing protocol is used for which OS?
Option A:	UNIX
Option B:	WINDOWS
Option C:	LINUX
Option D:	MAC

7.	Arrange the following statements in chronological order as the steps to access the hosted files. a)Mount file systems. b) Access the file systems. c) Create NAS file systems. d) Create storage array volumes. e) Create NAS volumes.
Option A:	e-c-d-a-b
Option B:	b-c-d-a-e
Option C:	c-d-b-a-e
Option D:	d-e-c-a-b
8.	In SAN storage model, the operating system view storage resources as —— devices
Option A:	FC
Option B:	SCSI
Option C:	SAN
Option D:	FCSI
9.	In FC structure which layer maps block I/O SCSI commands into FC frames?
Option A:	FC-4
Option B:	FC-1
Option C:	FC-0
Option D:	FC-3
10.	Which one is a major classification of zoning?
Option A:	Freeware
Option B:	Soft
Option C:	Hardware
Option D:	Hard
11.	Which is true about SAN?
Option A:	It uses a switch to connect servers to storage.
Option B:	It must use Fibre Channel networking.
Option C:	It's best for file-based storage.
Option D:	It attaches directly to a host computer.
12.	what is capacity planning
Option A:	plan and implement computer resources
Option B:	planning of bug removal activities
Option C:	planning of quality assurance
Option D:	planning of testing
13.	what is OLTP workload
Option A:	multiple users performing a set of inconsistent transactions having online transaction processing workload
Option B:	multiple users performing a set of consistent transactions having online transaction processing workload
Option C:	single users performing a set of consistent transactions having online transaction processing workload
Option D:	multiple users performing a set of consistent transactions having offline transaction processing workload

14.	compatibility with the existing network resources & support for multiple file protocols, these features can be provided for workload characterization by
Option A:	SAN
Option B:	IP-SAN
Option C:	NAS
Option D:	DAS
15.	iSCSI is used for
Option A:	SCSI data transfer over supernet
Option B:	SCSI data transfer over subnet
Option C:	SCSI data transfer over intranet
Option D:	SCSI data transfer over internet
16.	Which is a separate facility that does not have any computer equipment but is a place where the knowledge workers can move after the disaster ?
Option A:	Hot site
Option B:	Cold Site
Option C:	Plan
Option D:	Sessions
17.	Disaster Recovery Plans must focus primarily upon:
Option A:	Recovery of all business functionality
Option B:	Recovery of circuits
Option C:	Recovery of processes
Option D:	Recovery of IT technologies and communications network resources that support time-critical business processes
18.	The purpose of Business Continuity Plans are to:
Option A:	Counteract interruptions to preserve business activities and to protect time-critical business processes
Option B:	Mitigate disasters before they occur
Option C:	Comply with audit requirements
Option D:	Meet management by objective requirements
19.	What kind of backup, backs up the data over the SAN without THE data passing through the app server?
Option A:	Serverless backup
Option B:	LAN based backup
Option C:	WAN backup
Option D:	LAN-free backup
20.	What does CIM Stands for
Option A:	common information model
Option B:	costless information model
Option C:	customers information model
Option D:	consumers information model

Q2 (20 Marks)	Solve any Four out of Six 5 marks each
A	Explain the two types of ISS?
B	Discuss the various factors that affect the NAS performance and availability in detail?
C	Describe FC Protocol Stack?
D	explain the physical structure of HDD.
E	Draw Business Continuity Life cycle and explain
F	explain how SAN is provided as a solution for OLTP workload?

Q3 (20 Marks)	Solve any four Questions out of six 5 marks each
A	explain how NAS contributes to enterprise web workload?
B	Write a note on : Network file sharing
C	Explain FC flow control using neat diagram?
D	what is storage planning and capacity planning?
E	Explain Various security challenges in storage?
F	explain how ILM can be implemented?

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)
Examinations Commencing from 15th June 2021
Program: **INFORMATION TECHNOLOGY**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ITDLO7031 and Course Name:SAN

Time: 2 hour   Max. Marks: 80

===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	B
Q3.	C
Q4	D
Q5	A
Q6	B
Q7	D
Q8.	B
Q9.	A
Q10.	C
Q11.	A
Q12.	A
Q13.	B
Q14.	C
Q15.	D
Q16.	B
Q17.	D
Q18.	A
Q19.	A
Q20.	A

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)
Examinations Commencing from 15th June 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 following questions. All the Questions are compulsory and carry equal marks (40 Marks)
1.	Which Library is used for application user interfaces?
Option A:	android.webkit
Option B:	android.os
Option C:	android.app
Option D:	android.view
2.	When an activity is no longer visible which callback method is called
Option A:	onDestroy()
Option B:	onRestart()
Option C:	onStop()
Option D:	onVisible()
3.	handle communication between Android OS and applications
Option A:	Activities
Option B:	Services
Option C:	Broadcast Receivers
Option D:	Content Providers
4.	For a foreground activity in Android what is the lifecycle order ?
Option A:	onCreate() -> onStart() -> onResume()
Option B:	onCreate() -> onStart () -> onResume() -> onStop()
Option C:	onCreate() -> onStart() -> onStop()
Option D:	onCreate() -> onStart() -> onResume() -> onStop() -> onRestart()
5.	What method is called when a fragment is no longer interactive and the user is about to leave the fragment
Option A:	onResume()
Option B:	onDetach()
Option C:	onDestroy()
Option D:	onPause()

6.	Which is the best suited dimension for font sizes in Android?
Option A:	dp
Option B:	px
Option C:	sp
Option D:	pt
7.	What attribute can be used to change the location of the child view in FrameLayout
Option A:	gravity
Option B:	name
Option C:	position
Option D:	content_wrap
8.	The process of deciding which Activity to start when an implicit Intent is passed into Start Activity is called _____
Option A:	Broadcast Intents
Option B:	PendingIntent
Option C:	Intent resolution
Option D:	Intent Filter

9.	Which is the best suited dimension for font sizes in AndroidWhat does this code do?
	 Intent intent=new Intent();
	 intent.setAction(Intent.ACTION_VIEW):
	 intent.setData(android.net.uri.parse("http://www.mu.ac.in"));
	 startActivity(intent);

Option A:	Starts a subActivity
Option B:	Starts a service
Option C:	sends result to another activity
Option D:	starts an activity using an implicit intent
10.	_____ handles the HTTP connection and monitors connectivity changes and system reboots to ensure each download completes successfully
Option A:	Intent
Option B:	Download Manager
Option C:	Internet
Option D:	Linkify
11.	_____ are a mechanism used to attack primitive values to an Intent
Option A:	Extras
Option B:	Service
Option C:	linkify
Option D:	Intent
12.	Which class is used to upgrade a lower version of database to higher version in android Sqlite?
Option A:	Helper Class
Option B:	Cursor Class
Option C:	Intent Class
Option D:	Sqlite class

13.	What runs in the background and doesn't have any UI Components?
Option A:	Broadcast Receivers
Option B:	Intents
Option C:	Activities
Option D:	Services
14.	Which of the following is not a JSON type?
Option A:	Object
Option B:	date
Option C:	Array
Option D:	string
15.	The requests from Content Provider class is handled by which method
Option A:	onCreate
Option B:	onSelect
Option C:	onClick
Option D:	ContentResolver
16.	Which datatype is not supported by the SQLite storage classes?
Option A:	Integer
Option B:	Real
Option C:	Text
Option D:	Varchar
17.	Moving to a specific location in the media player can be done by which of the MediaPlayer method?
Option A:	seek(int msec)
Option B:	seekTo(int msec)
Option C:	moveTo(float msec)
Option D:	goto(int msec)
18.	The following object helps in getting the status of the android call?
Option A:	READ_PHONE_STATE
Option B:	READ_CONTACT
Option C:	READ_NETWORK_STATE
Option D:	READ_NETWORK_INFO
19.	Which of the following is a security provided by Android?
Option A:	Android level security
Option B:	App and kernel level security
Option C:	Java level security
Option D:	Android provides no security
20.	In order to publish app so that they can be deploy on others devices the following should be ready from developer's perspective
Option A:	Java,Xml,manifest code without apk
Option B:	Only apk file
Option C:	Signed apk file
Option D:	Unsigned apk file

Q2	Solve any Two Questions out of Three	10 marks each
A	*Explain what data consistency is? How can it be achieved? Also explain content provider in detail*	
B	*Explain how to get current location of android device for providing various location based service*	
C	*What is Fragment ? Explain the lifecycle of the Fragments in Android.*	

Q3	Solve any Two Questions out of Three	10 marks each
A	*List different Notification techniques supported by the Android Operating System. Explain any one of them in detail.*	
B	*Explain the button click event listener and callback method with an example*	
C	*Create an app which take two values using EditText and display the addition of two number using Toast on button click. Write Java Code only.*	

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)
Examinations Commencing from 15th June 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

===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	C
Q3.	C
Q4	A
Q5	D
Q6	C
Q7	A
Q8.	C
Q9.	D
Q10.	B
Q11.	A
Q12.	A
Q13.	D
Q14.	B
Q15.	D
Q16.	D
Q17.	B
Q18.	A
Q19.	B
Q20.	C

Examinations Commencing from 15th June 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

==

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	A processor performing fetch or decoding of various instruction during execution of another instruction is called_____.
Option A:	Parallel Processor
Option B:	Pipeline Processor
Option C:	Super computer
Option D:	Scaler processor
2.	SIMT represents_____ of the followings.
Option A:	Single instruction, multiple threads
Option B:	Single instruction, multiple tasks
Option C:	Single interface, multiple threads
Option D:	Single interface, multiple tasks
3.	Which of the following is the fastest storage unit in a memory hierarchy?
Option A:	Main memory
Option B:	Hard disk
Option C:	Register
Option D:	Cache
4.	Which value has the speedup of a parallel program that achieves an efficiency of 75% on 32 processors?
Option A:	18
Option B:	24
Option C:	16
Option D:	20
5.	Flynn's classification depends upon the parallelism on _____ and _____ streams
Option A:	instruction, data
Option B:	task, data
Option C:	thread, data
Option D:	instruction, program

6.	What is diameter of binary tree switch network?
Option A:	n log n
Option B:	log n
Option C:	2log n
Option D:	n^2 log n
7.	The system performance and throughput capability system does not depend on
Option A:	clock speed
Option B:	number of instructions per second
Option C:	number of processors
Option D:	Programming language
8.	Parallelizing Compilers demonstrates _____ parallelism.
Option A:	Implicit
Option B:	Explicit
Option C:	Implicit as well as Explicit
Option D:	Compile time
9.	Granularity of the decomposition does not dependent on
Option A:	Number of tasks
Option B:	Size of tasks
Option C:	Number of lines of code
Option D:	Number of functions
10.	Which of the following decomposition techniques uses divide and conquer strategy?
Option A:	Data decomposition
Option B:	Recursive decomposition
Option C:	Exploratory decomposition
Option D:	Speculative decomposition
11.	Data parallel programming utilizes _____ data allocation.
Option A:	Implicit
Option B:	Explicit
Option C:	Semi explicit
Option D:	Implicit or semi-explicit
12.	Speed up is the ratio of sequential execution time and _____.
Option A:	Parallel execution time
Option B:	Total computational time
Option C:	Parallel execution time and number of processors
Option D:	Number of processors
13.	Message passing programs exploit _____parallelism.
Option A:	large-grain

Option B:	fine-grain
Option C:	Synchronous
Option D:	implicit
14.	Which of the following is true for MPI communication function: MPI_Gatherv.
Option A:	Operation in which different processes may contribute different numbers of elements
Option B:	Operation in which all to all exchange of data elements among processes.
Option C:	Operation in which number of elements collected from different processes may vary
Option D:	Operation in which different processes may end up with different number of elements
15.	Cost of solving a problem on a parallel system is the product of parallel runtime and _____used.
Option A:	Number of iterations
Option B:	Number of dependent tasks
Option C:	Number of processors
Option D:	Number of independent tasks
16.	Which of the following is not valid with reference to Message Passing Interface?
Option A:	MPI can run on any hardware platform
Option B:	The programming model is a distributed memory model
Option C:	All parallelism is implicit
Option D:	MPI communication returns total number of MPI processes in specified communication
17.	Which of the parameter is not used in send primitive in MPI?
Option A:	Buffer to store data
Option B:	Number of data units
Option C:	Destination process
Option D:	Sender process
18.	Amdahl's law is based on _____ speedup metric.
Option A:	Fixed problem size
Option B:	Fixed time speedup
Option C:	Memory bound speedup
Option D:	recursion bound speedup
19.	What is GPU?
Option A:	General Purpose Unit
Option B:	Graphics Processing Unit
Option C:	Graphical Portable unit
Option D:	Graphics Programming Unit

20.	Parallel programs: Which speedup could be achieved according to Amdahl´s law for infinite number of processors if 5% of a program is sequential and the remaining part is ideally parallel?
Option A:	100
Option B:	50
Option C:	20
Option D:	10

Q2.	Solve any Four out of Six 5 marks each
A	Explain Non-Blocking Communication using MPI.
B	What are the principles of Message Passing Programming?
C	Discuss the categories of computers based on Flynn's classification.
D	Explain synchronization mechanism.
E	Explain CUDA processor architecture
F	State Amdahl's and Gustafson's law.

Q3.	Solve any Two Questions out of Three 10 marks each
A	What are the different network topologies? Explain in detail.
B	What are the different Performance metrics?
C	Explain in detail Architecture of NVIDIA GPU.

University of Mumbai
Examination 2021 under cluster ALL (Lead College: SSJCOE)

Examinations Commencing from 15th June 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

===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	A
Q3.	C
Q4	B
Q5	A
Q6	C
Q7	D
Q8.	A
Q9.	C
Q10.	B
Q11.	D
Q12.	A
Q13.	A
Q14.	C
Q15.	C
Q16.	C
Q17.	D
Q18.	A
Q19.	B
Q20.	C

Q.2

    A. Explanation with illustrative example – 5 Marks
    B. All principles- 5 Marks
    C. Complete classification based on different categories- 5 Marks
    D. Explanation of Synchronization with illustrative example – 5 Marks
    E. Architecture diagram- 2 Marks, Explanation- 3 Marks
    F. Amdahl's law- 2 Marks, Gustafson's law- 3 Marks

Q 3

    A. Categorization- 2 Marks, Explanation of at least 4 – 2 Marks each
    B. Performance metrics listing- 2 Marks, Explanation with illustrative example- 8 Marks
    C. Architecture diagram- 5 Marks, Explanation- 5 Marks

Examination: BE   Semester VII

Course Code: ITDILO7034 and Course Name: Sodftware Testing and Quality Assurance

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 following phase can be described as the revolutionary turning point in the history of software testing.
Option A:	Debugging-oriented Phase
Option B:	Destruction-oriented Phase
Option C:	Evaluation-oriented Phase
Option D:	Demonstration-oriented Phase
2.	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
3.	In case-effect graphing based testing method, a cause is
Option A:	Based on the analysis of the specification
Option B:	Transformed into a Boolean graph linking
Option C:	A high probability that errors made in a previous project is repeated again
Option D:	Distinct input condition identified in the problem
4.	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.
5.	Which entity is not considered in software measurement?
Option A:	Processes
Option B:	Resource
Option C:	Internal attributes
Option D:	Development
6.	All software features and combinations of features are to be tested in which components of test plan
Option A:	Test Plan Identifier components
Option B:	Introduction components

Option C:	Approach components
Option D:	Features to be tested components
7.	Which is not type of software design complexity that can also be used in testing?
Option A:	Structural complexity
Option B:	Data complexity
Option C:	System complexity
Option D:	Functional complexity
8.	_____Testing is performed to examine if all the functions of your web app works as expected
Option A:	Integration
Option B:	Functional
Option C:	Smoke
Option D:	Regression
9.	How do we measure the size of user story for an Agile project?
Option A:	Story points
Option B:	Function points
Option C:	Module points
Option D:	Velocity points
10.	In ISO 9126 Quality Characteristic Portability is
Option A:	A set of attributes that bear on the capability of software to maintain its performance level under stated conditions for a stated period of time.
Option B:	A set of attributes that bear on the existence of a set of functions and their specified properties. The functions are those that satisfy stated or implied needs.
Option C:	A set of attributes that bear on the relationship between the software's performance and the amount of resource used under stated conditions
Option D:	A set of attributes that bear on the ability of software to be transferred from one environment to another .
11.	Which is not the measure to assess a web application?
Option A:	Maintainability
Option B:	Usability
Option C:	Navigability
Option D:	The content
12.	Scope of Quality management is _____ than control or assurance
Option A:	Smaller
Option B:	Same
Option C:	Larger
Option D:	Not related
13.	Software metrics are used by the software industry to quantify
Option A:	The development and maintenance of the software
Option B:	The design and implement of the software
Option C:	The testing and coding of the software
Option D:	The document and design of the software

14.	Tracking test progress is the goal of
Option A:	Size category metrics
Option B:	Quality category metrics
Option C:	Cost category metrics
Option D:	Progress category metrics
15.	Quality of test plan is the attributes of
Option A:	Size category metrics
Option B:	Quality category metrics
Option C:	Cost category metrics
Option D:	Progress category metrics
16.	Because of _____ ; successful test execution automation difficult
Option A:	Because the tools for automated testing require too much effort for learning
Option B:	Because the maintenance of the test system is difficult
Option C:	Because the test robot tools are restricted in their ability to recognize outputs
Option D:	Because the test robot needs to be supported by a test management
17.	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
18.	What is Condition stub in decision table?
Option A:	It is a list of resulting actions which will be performed if a combination of input condition is satisfied
Option B:	It is a list of input conditions for which the complex combination is made.
Option C:	It is a specific entry in the table corresponding to input conditions mentioned in the condition stub
Option D:	It is the entry in the table for the resulting action to be performed
19.	If we extend the concept of Boundary Value Checking by considering more than one variable on the boundary the it is called as
Option A:	Equivalence class
Option B:	Robustness testing
Option C:	Fitness testing
Option D:	Worst-case testing method
20.	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

Q2 (20 Marks Each)	Solve any FOUR Questions out of Three 10 marks each
A	What are your views on 'Testing is the process of executing a program with the intent of finding errors.'
B	What are the guidelines for selecting Testing tool for any software project
C	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.

Q3 (20 Marks Each)	Solve any Two Questions out of Three 10 marks each
A	What are your views on " Process affects Quality " What are different quality factors
B	Explain challenges faced in testing for web based system

C	Consider the following program segment:
	main()
	{
	int number, index;
	1. printf("Enter a number");
	2. scanf("%d, &number);
	3. index = 2;
	4. while(index <= number – 1)
	5. {
	6. if (number % index == 0)
	7. {
	8. printf("Not a prime number");
	9. break;
	10. }
	11. index++;
	12. }
	13. if(index == number)
	14. printf("Prime number");
	15. } //end main
	
	(a) Draw the DD graph for the program.
	(b) Calculate cyclomatic complexity of the program using all the methods.
	(c) List all independent paths.

	(d) Design test cases from independent paths.

Examination: BE   Semester VII

Course Code: ITC8046 and Course Name: Sodftware Testing Quality Assurance

Time: 2 hour   Max. Marks: 80

==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	C
Q3.	B
Q4	D
Q5	D
Q6	D
Q7	B
Q8.	C
Q9.	B
Q10.	B
Q11.	C
Q12.	C
Q13.	D
Q14.	A
Q15.	D
Q16.	B
Q17.	A
Q18.	B
Q19.	D
Q20.	B

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)
Examinations Commencing from 15th June 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

===

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Consider two fuzzy sets, A = {1/2 + 0.6/4 + 0.5/6 + 0.2/8} and B = {0.5/2 + 0.4/4 + 0.2/6 + 0.1/8}. What will be the result of Union Operation
Option A:	{1/2 + 0.6/4 + 0.5/6 + 1/8}
Option B:	{1/2 + 0.6/4 + 0.5/6 + 0.2/8}
Option C:	{1/2 + 0.4/4 + 0.1/6 + 0.2/8}
Option D:	{0.5/2 + 0.4/4 + 0.2/6 + 0.1/8}
2.	Linearly separable pattern classification
Option A:	Can be solved by perceptron learning rule
Option B:	Cannot be solved by perceptron learning rule
Option C:	Cannot be solved by any neural network
Option D:	Can be solved by fuzzy controller
3.	Binarization, preprocessing, slant correction and thinning are the steps of
Option A:	Genetic algorithm
Option B:	Fuzzy controller
Option C:	Character recognition
Option D:	Genetic fuzzy hybrid system
4.	Consider two fuzzy sets, A= {1/x1 + 0.75/x2 + 0.3/x3 + 0.15/x4 + 0/x5} and B= {1/x1 + 0.6/x2 + 0.2/x3 + 0.1/x4 + 0/x5}. Then Intersection of A & B is _____.
Option A:	{1/x1 + 0.75/x2 + 0.3/x3 + 0.15/x4 + 0/x5}
Option B:	{0/x1 + 0.4/x2 + 0.8/x3 + 0.9/x4 + 0/x5}
Option C:	{1/x1 + 0.6/x2 + 0.2/x3 + 0.1/x4 + 0/x5}
Option D:	{0/x1 + 0.2/x2 + 0.6/x3 + 0.9/x4 + 1/x5}
5.	Learning is the process of _____
Option A:	Adjusting the weights
Option B:	Maximizing the error
Option C:	Decreasing number of hidden layers
Option D:	Incorporating feedback in the network
6.	Genetic algorithm is used for …………

Option A:	testing
Option B:	Optimization
Option C:	Learning
Option D:	Converting crisp output to fuzzy set
7.	Error correction, memory based, Boltzmann are types of _____
Option A:	testing
Option B:	Optimization
Option C:	Learning
Option D:	Feature selection
8.	Fuzzy singleton is a fuzzy set
Option A:	That contains membership value 1 for all elements in X
Option B:	Whose support is a single element in X
Option C:	That contains membership value 0 for all elements in X
Option D:	Whose height is 1
9.	ART1 has full form as _____
Option A:	Adaptive recovery technique 1
Option B:	Adjustable recovery technique 1
Option C:	Adaptive Resonance theory 1
Option D:	Adjustable Resonance theory 1
10.	Minimum value of membership is used for following operation
Option A:	Union
Option B:	Intersection
Option C:	Algebraic product
Option D:	Bounded difference
11.	Relation R will be a _____ relation if all the three properties: Reflexive, Symmetric, Transitivity are satisfied.
Option A:	Fuzzy equivalence
Option B:	Fuzzy satisfaction
Option C:	Fuzzy generative
Option D:	Fuzzy imperative
12.	Considering D as desired output, and O as the actual output, the learning signal for perceptron learning rule is
Option A:	O
Option B:	D
Option C:	D-O
Option D:	D+O
13.	The crisp set of elements that belong to fuzzy set to a membership degree greater than alpha is called as
Option A:	Alpha level set
Option B:	Strong alpha level set

Option C:	Weak alpha level set
Option D:	Perfect alpha level set
14.	In ART1(Adaptive resonance theory 1) network, Vigilance parameter decides
Option A:	whether to consider winner neuron for weight updation or not
Option B:	Neuron's activation function
Option C:	Bias
Option D:	Whether to change the weights for all neurons
15.	Initial Population in Genetic Algorithm (represented by chromosomes) is
Option A:	Set of crossover points
Option B:	Set of Fitness values
Option C:	Set of solution
Option D:	Set of probabilities
16.	In ANFIS architecture the following layer converts crisp inputs to fuzzy sets
Option A:	Fuzzification
Option B:	Defuzzification
Option C:	Normalization
Option D:	Output
17.	Fuzzy set is defined as set of ordered pairs of
Option A:	Element x and degree of belongingness
Option B:	Element x and angle of belongingness
Option C:	Element x and probability of belongingness
Option D:	Element x and intuition of belongingness
18.	Which of the following is not encoding method in genetic algorithm
Option A:	Value encoding
Option B:	Adaptive encoding
Option C:	Tree encoding
Option D:	Binary encoding
19.	ANFIS is a hybrid system that have the ability …………..
Option A:	To self-modify their membership function to achieve a desired performance.
Option B:	To self-modify their Accuracy
Option C:	Do not self-modify
Option D:	Not able to achieve any performance
20.	Let us consider random initial population of size N=4 of a binary-coded genetic algorithm, as given below: 1011 1100 0100 0101

	Let us also assume that their fitness values are nothing but their decoded values. Using Roulette-Wheel selection, their probability values of being selected in the mating pool are found to be as follows:
Option A:	0.4, 0.3, 0.2, 0.1
Option B:	0.2, 0.4, 0.3, 0.1
Option C:	0.125, 0.156, 0.34, 0.375
Option D:	0.34, 0.375, 0.125, 0.156

Q2.	**Solve any Four out of Six 5 marks each**
A	Explain fuzzy Extension principle with example.
B	Explain McCulloch Pitts Neuron model.
C	Differentiate between supervised and unsupervised learning.
D	Draw ANFIS architecture
E	Give basic steps of genetic algorithm
F	Determine alpha level sets for the given fuzzy set. Consider alpha= 0.2, 0.4, 0.6, 0.7, 0.9 A={0.2/x1+0.7/x2+0.9/x3+0.4/x4+0.6/x5}

Q3.	**Solve any Two Questions out of Three 10 marks each**
A	Explain any four defuzzification method
B	Describe different crossover and mutation operators in Genetic Algorithm
C	Determine the weights after four steps of training for Perceptron learning rule of single neuron network starting with initial weights :- W=[0 0]^t, inputs as x1=[2 2]^t, x2=[1 -2]^t, x3=[-2 2]^t, x4=[-1 1]^t, d1=0, d2=1, d3=0, d4=1 and c=1

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)
Examinations Commencing from 15th June 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

===

Question Number	Correct Option
Q1.	B
Q2.	A
Q3.	C
Q4.	C
Q5.	A
Q6.	B
Q7.	C
Q8.	B
Q9.	C
Q10.	B
Q11.	A
Q12.	C
Q13.	B
Q14.	A
Q15.	C
Q16.	A
Q17.	A
Q18.	B
Q19.	A
Q20.	D

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 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

===

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Color and size of the product, brand and packaging are considered as,
Option A:	Physical features of product
Option B:	Product designing
Option C:	Product manufacture
Option D:	Chemical features of product
2.	Which of the following is the last stage of Product Life Cycle?
Option A:	Introduction Stage
Option B:	Growth stage
Option C:	Decline stage
Option D:	Mature stage
3.	ISO 14042:2000 is related to:
Option A:	Principles & framework
Option B:	Life cycle inventory
Option C:	Life cycle impact assessment
Option D:	Life cycle interpretation
4.	Which of the following is the first step of product development process:
Option A:	Production ramp-up
Option B:	Identification of customer needs
Option C:	Prototyping
Option D:	Product design
5.	Function costing includes,
Option A:	breaking the product down into the functions.
Option B:	detection of activities that forms a PLC.
Option C:	estimating the cost of a product based on its features.
Option D:	Cost of overall product life cycle.
6.	Which of the following is not a characteristic of "Market Introduction Stage" in PLC?
Option A:	Demands has to be created
Option B:	Makes no money at this stage
Option C:	Slow sales volume to start
Option D:	Costs are low
7.	PDM stands for:
Option A:	Product Database Maintenance
Option B:	Price Data Management
Option C:	Product Data Management

Option D:	Production Data Management
8.	_____ is a starting point of development of a PLM strategy.
Option A:	PLM vision
Option B:	PLM goals
Option C:	PLM objectives
Option D:	PLM mission
9.	An Algorithm is a type of:
Option A:	tangible goods
Option B:	services
Option C:	maintenance
Option D:	intangible goods
10.	Which of the following focuses on environmental resources & its proper use?
Option A:	Value analysis
Option B:	PLM objectives
Option C:	Sustainable development
Option D:	Life cycle cost analysis
11.	End of life strategies are used to:
Option A:	repairing of the product at the end of its life.
Option B:	recover the material at the end of its useful life.
Option C:	increase the life of the product by extending the end of the product
Option D:	maintenance of the product to increase its useful life.
12.	Which one of the following gives suggestions for new product and also helps to market new products?
Option A:	Existing products and services
Option B:	Federal government
Option C:	Distribution Channels
Option D:	Consumers
13.	The products enters maturity when,
Option A:	Decrease in profit
Option B:	Increase in sale
Option C:	Sales start growing
Option D:	Sales stop growing and demand stabilizes
14.	Which of the following involves, varying the physical properties of similar products & switching inter-changeable components?
Option A:	Value engineering
Option B:	Configuration management
Option C:	Product variant
Option D:	Change management
15.	PLM focuses on,
Option A:	value
Option B:	pricing
Option C:	product
Option D:	quality
16.	_____ it is a method that tries to stimulate the way in which directly illuminated surfaces act as indirect light sources that illuminate other surfaces.

Option A:	Ray tracing
Option B:	Radiosity
Option C:	Digital mock up unit
Option D:	Ray casting
17.	Which of the following uses cross functional integration for concurrent development of a product?
Option A:	Concurrent engineering
Option B:	Value analysis
Option C:	Business analysis
Option D:	Value engineering
18.	Which of the following modeling refers to generate 3D features based on relationships with existing geometry?
Option A:	Parametric modeling
Option B:	Code driven modeling
Option C:	Surface modeling
Option D:	Direct modeling
19.	Compulsory stages of LCIA are:
Option A:	Selection, classification, characterization
Option B:	Scope & goal
Option C:	Functional unit, system boundaries
Option D:	data collection, allocation procedures
20.	Due to _____ it is now possible to do business in all over countries in the world.
Option A:	globalisation
Option B:	liberalization
Option C:	commercialization
Option D:	standardization

Q2	Solve any Four out of Six. (5 marks each)
A	Write a note on Digital Mock-up Unit.
B	What are the various barriers to PDM implementation?
C	What are the important factors in sustainable development?
D	Explain general framework for LCCA?
E	Write a note on Design for Environment.
F	Explain PDM system.

Q3.	Solve any Two Questions out of Three. (10 marks each)
A	What is PLM? What are its benefits & applications?
B	Explain the process of developing & implementing a PLM strategy.
C	Explain the new product development in detail.

Examinations Commencing from 15th June 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
==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	C
Q4	B
Q5	A
Q6	D
Q7	C
Q8.	A
Q9.	D
Q10.	C
Q11.	B
Q12.	C
Q13.	D
Q14.	B
Q15.	C
Q16.	B
Q17.	A
Q18.	D
Q19.	A
Q20.	A

University of Mumbai
Examination 2021 under cluster ALL(Lead College: VCET)
Examinations Commencing from 15th June 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

==

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	What is the failure cost of a product possessing reliability R=1?
Option A:	Zero
Option B:	Unity
Option C:	Infinity
Option D:	Negative
2.	Which among the below mentioned types of redundancy exhibits maximum failure rate?
Option A:	Cold standby
Option B:	Warm or Tepid
Option C:	Hot or Active
Option D:	Negative
3.	At a certain university, 4% of men are over 6 feet tall and 1% of women are over 6 feet tall. The total student population is divided in the ratio 3:2 in favour of women. If a student is selected at random from among all those over six feet tall, what is the probability that the student is a woman?
Option A:	2/5
Option B:	3/5
Option C:	3/11
Option D:	1/100
4.	The probability density function of a Markov process is .
Option A:	p(x1,x2,x3.......xn) = p(x1)p(x2/x1)p(x3/x2).......p(xn/xn-1)
Option B:	p(x1,x2,x3.......xn) = p(x1)p(x1/x2)p(x2/x3).......p(xn-1/xn)
Option C:	p(x1,x2,x3......xn) = p(x1)p(x2)p(x3).......p(xn)
Option D:	p(x1,x2,x3......xn) = p(x1)p(x2 *x1)p(x3*x2)........p(xn*xn-1)
5.	The operational availability is calculated as:
Option A:	$A_O = \frac{Operating\ cycle}{uptime}$
Option B:	$A_O = \frac{uptime}{operating\ cycle}$
Option C:	$A_O = \frac{Operating\ cycle}{downtime}$
Option D:	$A_O = \frac{downtime}{operating\ cycle}$

6.	It is suitable to use Binomial Distribution only for _____
Option A:	Large values of 'n'
Option B:	Fractional values of 'n'
Option C:	Small values of 'n'
Option D:	Any value of 'n'
7.	What is MTTF ?
Option A:	Maximum time to failure
Option B:	Mean time to failure
Option C:	Minimum time to failure
Option D:	Moderate Time to Failure
8.	Which one of the below is measured by MTBF?
Option A:	Tolerance
Option B:	Life time
Option C:	Reliability
Option D:	Quality
9.	Normal Distribution is applied for
Option A:	Continuous Random Distribution
Option B:	Discrete Random Variable
Option C:	Irregular Random Variable
Option D:	Uncertain Random Variable
10.	A go/no-go device is tested until it fail. If X is the number of tests to first failure with no wear our present, and the probability of success on each test is 0.99, then the probability that X is greater than 5 is:
Option A:	0.931
Option B:	0.941
Option C:	0.9510
Option D:	0.9610
11.	Inherent availability is the steady state availability when considering only
Option A:	the corrective maintenance of mean time of the system
Option B:	the corrective maintenance of median time of the system
Option C:	the correlative maintenance of mean time of the system
Option D:	the corrective maintenance of downtime of the system
12.	What is the area under a conditional Cumulative density function?
Option A:	Zero
Option B:	Infinity
Option C:	One
Option D:	Changes with CDF
13.	What will be the reliability of the system for a 100-hour mission, the system has three subsystems are reliability-wise in parallek, Subsystem 1 has a reliability of 99.5%, Subsystem 2 has a reliability of 98.7% and Subsystem31 has a reliability of 97.3%,
Option A:	0.96
Option B:	0.97

Option C:	0.98
Option D:	0.99
14.	According to exponential law of reliability, the relationship between the reliability and the system failure due to consistency in occurrence of failure rate, can be generally expressed as _____
Option A:	$R = \lambda t$
Option B:	$R = -\lambda t$
Option C:	$R = e \lambda t$
Option D:	$R = e- \lambda t$
15.	Failure rates in reliability analysis for the exponential case :
Option A:	Are multiplied together for independent events
Option B:	Increase to the mean value and then decrease
Option C:	Are summed to combine independent series elements in reliability analysis
Option D:	Are used to model the Weibull when $\beta = 2$
16.	which of the following is not the advantage of the restoration
Option A:	it reduces the cost of test equipment and downtime system
Option B:	it reduces the cost of system restoration
Option C:	it reduces space and size needed for keeping new systems
Option D:	it is possible even if the spare system is not available
17.	Which of the following can be considered as the worst feature of an aircraft in terms of maintainability?
Option A:	Requirements of removing number of major structural elements
Option B:	Easily reachable parts
Option C:	More accessibility is provided for components
Option D:	Easily accessible parts
18.	Markov analysis assumes that conditions are both
Option A:	Complementary and collectively exhaustive.
Option B:	Collectively dependent and complementary.
Option C:	Collectively dependent and mutually exclusive.
Option D:	Collectively exhaustive and mutually exclusive.
19.	Which method prevents the operating condition that exceeds beyond 50% of the maximum rating in order to improve the system reliability?
Option A:	Parts Improvement Method
Option B:	Structural Redundancy
Option C:	Effective & creative Design
Option D:	Derating of components
20.	What is the reliability of a four component parallel system when the reliabilities of each component are 0.70?
Option A:	0.9813
Option B:	0.9919
Option C:	0.1681
Option D:	0.9976

Q2	Solve any Four out of Six 5 marks each
A	Explain Mean Time to Failure and Mean Time Between Failure
B	What is series system? Obtain the system failure time density function for a series system with 'n' independent components. Suppose each of the n independent components has an exponential failure time distribution with constant failure rate λ_i, i= 1,2,3,……,n. Find the System Reliability.
C	Define (i) Standardization(ii) Interchangeability
D	Explain Fault Tree Analysis with suitable example
E	Consider a system that has eight components and the system will work if at least any five of the eight components work (5-out-of-8 system). Each component has a reliability of 0.87 for a given period. Find the reliability of the system.
F	Describe in detail the qualitative aspects of Availability.

Q3	Solve any Two out of Three 10 marks each
A	What do you mean by Bays theorem in Probability? Derive Bays Theorem. And explain how Bays Theorem is different from Conditional Probability?
B	Discuss Importance of Reliability, Quality Assurance and Failure Density.
C	Explain Cut-Set method and Decomposition Method with Suitable Example

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 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

===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	B
Q4	A
Q5	B
Q6	C
Q7	B
Q8.	C
Q9.	A
Q10.	C
Q11.	D
Q12.	C
Q13.	D
Q14.	D
Q15.	C
Q16.	A
Q17.	A
Q18.	B
Q19.	D
Q20.	B

University of Mumbai
Examination 2021 under cluster 6 (Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO7013 and Course Name: Management Information System

Time: 2 hour   Max. Marks: 80

==

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Vital roles that the information systems does not perform for a business enterprise includes _____
Option A:	Support of business processes and applications
Option B:	Support of decision making by employees and managers
Option C:	Support for paper based accounting ledger
Option D:	Support of strategies for competitive advantage
2.	Possible response of the ethical challenges faced by Business managers to implement applications of Information Technology includes_____
Option A:	Implementation of information system solutions
Option B:	Infringement on piracy
Option C:	Inaccurate information
Option D:	Incentives
3.	External forces that affected by element of knowledge management includes _____
Option A:	Globalization of business
Option B:	Technology capability
Option C:	Effectiveness of human resource
Option D:	Disseminating knowledge
4.	Types of data warehouse does not include ___
Option A:	Enterprise data warehouse
Option B:	Data marts

Option C:	Data acquisition centre
Option D:	Operational data warehouse
5.	Identify the correct setup in a database environment
Option A:	User, database, DBMS
Option B:	User, DBMS, database
Option C:	Database, user, DBMS
Option D:	DBMS, database, user
6.	Metadata is the data that describes_____
Option A:	The collection and management of data
Option B:	The subset of the data warehouse
Option C:	The data in the warehouse
Option D:	Operations and shares among users
7.	The reverse auction is normally used in _____marketplace model
Option A:	Buy-side
Option B:	Sell-side
Option C:	Group purchasing
Option D:	Electronic exchange
8.	_____ is the intangible property created by individuals or corporations.
Option A:	Intellectual property
Option B:	Copyright
Option C:	Patent
Option D:	Trade secret

9.	Which is not a Fundamental Tenets of Ethics
Option A:	Responsibility
Option B:	Accountability
Option C:	Liability
Option D:	Digital dossiers
10.	Exposure is ____
Option A:	The harm, loss or damage that can result if a threat compromises an information resource
Option B:	Any danger to which a system/information resource may be exposed
Option C:	The procedures, devices, or software aimed at preventing a compromise to a system.
Option D:	The possibility that the system/information resource will suffer harm by a threat.
11.	Organization XYZ tries to attract customers by providing them with experiences tailored to them. What is this technique referred to?
Option A:	Inbound Marketing
Option B:	Outbound Marketing
Option C:	Search Engine
Option D:	Conversation
12.	_____ act as online intermediaries that harness the power of social networks for introducing, buying, and selling products and services.
Option A:	Group shopping sites
Option B:	Social marketplaces

Option C:	Shopping Communities
Option D:	Peer-to-peer shopping models
13.	Banner advertising _____.
Option A:	Is sent directly to potential customers via e-mail
Option B:	Forces customers to click on an ad to get more information.
Option C:	Is of limited value because it cannot be customized to the target audience.
Option D:	Is another name for pop-up advertising.
14.	All the following describe a VPN except:
Option A:	A VPN uses the Internet as its main backbone network.
Option B:	A VPN relies on network firewalls, encryption, and other Internet and intranet security features.
Option C:	A VPN uses the Internet to establish secure intranets between its distant offices and locations.
Option D:	A VPN is available for use by anyone with access to the Internet.
15.	Older, traditional mainframe-based business information systems are called _____ systems.
Option A:	Historical
Option B:	Standard
Option C:	Legacy
Option D:	Application
16.	A communications medium that consists of one or more central wires surrounded by thick insulation is called _____cable.
Option A:	Coaxial
Option B:	Fiber optic
Option C:	Twisted-pair
Option D:	Packet-transmission

17.	Data that have been processed by the organization's _____ are inputs into the organization's database.
Option A:	Office automation systems
Option B:	Functional area information systems
Option C:	Transaction processing systems
Option D:	Decision support systems
18.	Which of the following are disadvantages of the buy option for acquiring IS applications?
Option A:	The software exactly meet the company's needs.
Option B:	The software is easy to modify.
Option C:	The companies have control over software improvements.
Option D:	The software may not integrate with existing systems.
19.	Which of the following statements is false?
Option A:	Companies that use Software-as-a-Service are running applications on the vendor's hardware.
Option B:	Application service providers are similar to Software-as-a-Service providers.
Option C:	Companies that purchase open-source software cannot modify it.
Option D:	Outsourcing refers to acquiring IT applications from outside contractors.
20.	Place the stages of the systems development life cycle in order:
Option A:	Investigation – analysis – design – programming/testing – implementation – operation/maintenance
Option B:	Investigation – design – analysis – programming/testing – implementation – operation/maintenance
Option C:	Analysis – design – investigation – operation/maintenance – programming/testing – implementation
Option D:	Investigation – analysis – design – programming/testing – operation/maintenance – implementation

Q2 (20 Marks)	Solve any Four out of Six 5 marks each
A	Explain the elements and objectives of Information Systems with a neat diagram
B	Explain the role of information system in framing organizational strategy and bringing competitive advantage
C	Differentiate between knowledge and information and explain the significance of knowledge for a business firm
D	Define and explain the various types of data warehouse
E	Identify the five factors that contribute to the increasing vulnerability of information resources, and provide a specific example of each one?
F	Compare and contrast human mistakes and social engineering, and provide a specific example of each one?

Q3 (20 Marks)	Solve any Four out of Six 5 marks each
A	Briefly describe the benefits of social commerce to customers.
B	Discuss why social computing is so important in customer relationship management?
C	Differentiate computer network wired and wireless technology?
D	Describe how cloud computing can help organizations expand the scope of their business operations.
E	Explain various ERP implementation strategies
F	Describe the tools that augment the traditional SDLC.

University of Mumbai
Examination 2021 under cluster 6 (Lead College:VCET)
Examinations Commencing from 15th June 2021
Program: **ALL**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO7013 and Course Name: Management Information Systems

Time: 2 hour   Max. Marks: 80

===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	D
Q3.	A
Q4	D
Q5	B
Q6	C
Q7	A
Q8.	A
Q9.	D
Q10.	A
Q11.	A
Q12.	B
Q13.	B
Q14.	D
Q15.	C
Q16.	A
Q17.	C
Q18.	D
Q19.	C
Q20.	A

University of Mumbai
Examination 2021 under cluster ALL(Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL_Institute Level Optional Course 1**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO 7014 and Course Name: Design of Experiments

Time: 2 hour   Max. Marks: 80
==

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	What is FALSE about strategy of experimentation called as best- guess approach _____.
Option A:	Guess dependent solution is produced
Option B:	May take long time
Option C:	Experimenters having knowledge are preferred
Option D:	Experimenters with good guessing power are preferred
2.	Consider the mathematical model y = f (x, z); $\Delta y = \frac{\partial f}{\partial x}\Delta x + \frac{\partial f}{\partial z}\Delta z$ Now determining the optimized x variability so that the variability of y is small is called _____.
Option A:	Process control
Option B:	Process optimization
Option C:	Robust design
Option D:	Process characterization
3.	The analysis procedure used for experimental data with uncontrollable and measurable nuisance factor is _____.
Option A:	Analysis of covariance
Option B:	Blocking
Option C:	Analysis of variance
Option D:	Analysis of average
4.	In the testing for Lack of Fit (LOF) the formula for sum of square for pure error is given by _____.
Option A:	$$SS_{PE} = \sum_{i=1}^{m}\sum_{j=1}^{n}(\overline{y_{ij}} + \hat{y_i})^2$$
Option B:	$$SS_{PE} = \sum_{i=1}^{m}\sum_{j=1}^{n}(\overline{y_{ij}} - \hat{y_i})^2$$

Option C:	$$SS_{PE} = \frac{1}{2} \sum_{i=1}^{m} \sum_{j=1}^{n} (\overline{y_{ij}} - \hat{y}_i)^2$$
Option D:	$$SS_{PE} = \frac{1}{2} \sum_{i=1}^{m} \sum_{j=1}^{n} (\overline{y_{ij}} + \hat{y}_i)^2$$
5.	Adding center points to a $2k$ factorial design allows the experimenter to obtain an estimate of pure experimental error. This allows the partitioning of the residual sum of squares SSE into two components. Which of the following is correct expression for SSE ?
Option A:	$SS_E = SS_{PE} + SS_{LOF}$
Option B:	$SS_E = SS_{PE} - SS_{LOF}$
Option C:	$SS_E = SS_{PE} * SS_{LOF} /(SS_{PE} + SS_{LOF})$
Option D:	$SS_E = SS_{PE} * SS_{LOF} / /(SS_{PE} - SS_{LOF})$
6.	A 2 X 2 factorial _____.
Option A:	is essentially two designs that have been combined into a single study.
Option B:	contains four factors.
Option C:	does not have enough factors to show interactions.
Option D:	is extremely difficult to interpret if interactions are found.
7.	What is the appropriate statistical test for a factorial design?
Option A:	the Modes test
Option B:	ANOVA
Option C:	t-test
Option D:	chi-square
8.	Each main plot is divided into subplots depending on the number of _____.
Option A:	Sub plot treatments
Option B:	Pre plot treatments
Option C:	Post plot treatments
Option D:	Modified plot treatments
9.	In field experiments certain factors may require _____ plots than for others.
Option A:	Lesser
Option B:	Same
Option C:	Larger
Option D:	Small

10.	Factorial designs _____.
Option A:	include no more than one research hypothesis.
Option B:	cannot test participants across more than one condition.
Option C:	contain more than one null hypothesis.
Option D:	are ineffective when matched participants are included.
11.	What type of control chart can be used to plot "number of defectives in the output of a process for making a machine part"data?
Option A:	C
Option B:	U
Option C:	S
Option D:	P
12.	The design in which no main effect is aliased with any other main effect, or with any two-factor interaction, but two-factor interactions are aliased with each other are called_____.
Option A:	Resolution VI design
Option B:	Resolution V design
Option C:	Resolution IV design
Option D:	Resolution III design
13.	Which of the following would be a useful contributor to a strategy of mass customization?
Option A:	Economics of scale
Option B:	Modular Design
Option C:	Offshoring
Option D:	Fixed Automation
14.	Which of the following is true?
Option A:	Having more than one dependent variable allows the examination of interactions between them.
Option B:	There must be the same number of independent variables as there are dependent variables.
Option C:	An experiment can have more than one dependent variable.
Option D:	An experiment can only have one dependent variable.
15.	Small differences in results from trial to trial can happen in case of_____.
Option A:	good data sets
Option B:	bad data sets
Option C:	sample data sets
Option D:	attribute data sets
16.	Which of the followings is true about sample size?
Option A:	the sample size should be as small as possible
Option B:	the sample size can be random
Option C:	the sample size is insignificant
Option D:	depends upon the quality characteristic under evaluation i.e. Variable or attribute

17.	Which of the following is an example of attribute data?
Option A:	volume
Option B:	switch on & switch off
Option C:	Temperature
Option D:	pressure
18.	A method for quantitatively identifying the right inputs and parameter levels for making a high quality product or service is called as -
Option A:	regression analysis
Option B:	design of experiments
Option C:	random factor design
Option D:	split plot design
19.	2^3 indicates how many levels?
Option A:	2
Option B:	3
Option C:	4
Option D:	8
20.	Larger the better S/N ratio is chosen in case of -
Option A:	undesirable characteristics
Option B:	bad characteristics
Option C:	desirable characteristics
Option D:	good characteristics

Q2. (20 Marks)	Solve any Four out of Six 5 marks each
A	What are Experimental Designs? Give its applications.
B	What are guidelines for designing experiments?
C	Write short note on S/N ratios.
D	What are Good and Bad datasets?
E	What is RMS?
F	Explain Construction of Normal Probability Plot.

Q3. (20 Marks)	Solve any Two Questions out of Three 10 marks each
A	What do you understand from the term 2^k design? Explain with an example.
B	Discuss testing for lack of fit
C	What are statistical aspects of conducting tests?

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL_Institute Level Optional Course 1**
Curriculum Scheme: Rev 2016
Examination: BE Semester VII
Course Code: ILO 7014 and Course Name: Design of Experiments

Time: 2 hour   Max. Marks: 80

==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	B
Q3.	A
Q4	B
Q5	A
Q6	A
Q7	B
Q8.	A
Q9.	C
Q10.	C
Q11.	D
Q12.	C
Q13.	B
Q14.	C
Q15.	B
Q16.	D
Q17.	B
Q18.	B
Q19.	A
Q20.	C

University of Mumbai

Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL**
Curriculum Scheme: R2016
Examination: BE   Semester VII
Course Code: ILO7015 and Course Name: Operations Research

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 assumptions of Linear Programming is not obeyed in Integer Linear Programming?
Option A:	Lineraity
Option B:	Continuity
Option C:	Additivity
Option D:	Finiteness
2.	Consider the LP problem Maximise $Z = x_1 - 3x_2 + 3x_3$ Subject to, $3x_1 - x_2 + 2x_3 \leq 7$ $2x_1 + 4x_2 \geq -12$ $-4x_1 + 3x_2 + 8x_3 \leq 10$ Where $x_1, x_2, x_3 \geq 0$ In the simplex algorithm, the variables that enters first is ___ and this variable replaces variable ____
Option A:	x_1, s_1
Option B:	x_2, s_3
Option C:	x_3, s_2
Option D:	x_1, s_2
3.	Which statement holds true for the given LP problem : Maximise $Z = 3x_1 + 5x_2$ Subject to, $2x_1 + x_2 \geq 7$ $x_1 + x_2 \geq 6$ $x_1 + 3x_2 \geq 9$ Where $x_1, x_2 \geq 0$
Option A:	This LP has no solution
Option B:	This LP has redundant constraints
Option C:	This LP has multiple solutions.
Option D:	This LP has an unbounded solution
4.	If two jobs J1 and J2 have same minimum process time under first machine but processing time of J1 is less than that of J2 under second machine, then J1 occupies:

Option A:	Second available place from left
Option B:	First available place from the left
Option C:	First available place from right
Option D:	Second available place from right
5.	To solve degeneracy in the transportation problem we have to:
Option A:	Allocate the smallest element epsilon in such a cell, which will form a closed loop with other loaded cells.
Option B:	Allocate the smallest element epsilon in such a cell, which will not form a closed loop with other loaded cells.
Option C:	Put allocation in one of the empty cell as zero
Option D:	Put a small element epsilon in any one of the empty cell
6.	Consider the following six jobs J1,J2,J3,J4,J5,J6 to be processed on two machines A and B in the order A,B . The processing times on machine A are [1,3,8,5,6,3] and on machine B are [5,6,3,2,2,10]. The optimal sequence is :
Option A:	J1-J2-J3-J4-J5-J6
Option B:	J1-J2-J6-J3-J5-J4
Option C:	J1-J2-J4-J5-J6-J4
Option D:	J1-J2-J3-J6-J5-J4
7.	How many routes are possible if travelling salesman travels six cities?
Option A:	10
Option B:	5
Option C:	24
Option D:	120
8.	In a departmental store, one cashier is there to serve the customers and the customers pick up their needs by themselves. The arrival rate is 7 customers for every 5 minutes and the cashier can serve 10 customers in 5 minutes. Assuming Poisson arrival rate and exponential distribution for service rate, the average number of customers in the system are---
Option A:	1.4
Option B:	0.5
Option C:	0.714
Option D:	2
9.	The characteristics of a queuing model is independent of:
Option A:	Service Pattern
Option B:	Number of service stations
Option C:	Queue discipline
Option D:	Limit of length of queue
10.	For a simple queue (M / M / 1), Probability that a person arriving will have to wait is known as ---
Option A:	Random factor
Option B:	Traffic intensity
Option C:	Poisson busy period
Option D:	Exponential service factor

11.	If the outcome at any decision stage is unique and known for the problem, then the Dynamic programming problem is known as:
Option A:	Static dynamic programming problem
Option B:	Deterministic dynamic programming problem
Option C:	Probabilistic dynamic programming problem
Option D:	Stochastic dynamic programming problem
12.	In Dynamic Programming Problems, the decisions are made in
Option A:	Single stage
Option B:	No decision making process
Option C:	2-stages
Option D:	Multi-stages
13.	If there are 'n' stages, and recursive equations for each stage is f1, f2 ……fn and if they are solved in the order f1 to fn and optimal return for f1 is r1 and that of f2 is r2 and so on, then the method of calculation is known as –
Option A:	Direct Computational Procedure
Option B:	Forward computational procedure
Option C:	Reverse Computational Procedure
Option D:	Backward Computational Procedure
14.	Dynamic Programming is also called as :
Option A:	Multistage problem
Option B:	Structural programming
Option C:	State problems
Option D:	Recursive optimization
15.	The value of the following game G is— $$\begin{bmatrix} 1 & 13 & 11 \\ -9 & 5 & -11 \\ 0 & -3 & 13 \end{bmatrix}$$
Option A:	0
Option B:	-1
Option C:	+1
Option D:	+11
16.	One of the assumption in the game theory is—
Option A:	Winner alone acts rationally
Option B:	All players act rationally and intelligently
Option C:	Loser acts intelligently
Option D:	Both the players believe luck
17.	Which statement holds true for the given game:

Option A:	Game is fair
Option B:	Game is strictly Determinable
Option C:	Saddle point is (1,3)
Option D:	No saddle point exists
18.	Setup costs do not include :
Option A:	Cost of processing the work piece
Option B:	Ordering cost of raw material
Option C:	Maintenance cost of the machines
Option D:	Labour cost of setting up machines
19.	The demand for a commodity is 100 units per day. Every time an order is placed, a fixed cost of Rs. 300 is incurred. Holding cost is Rs. 0.06/- per unit per day. If the lead time is 13 days, then economic lot size is:
Option A:	300
Option B:	1000
Option C:	1200
Option D:	100
20.	A particular item has demand of 3000 units per year. The cost of one procurement is Rs. 100 and the holding cost per unit is Rs. 2.40 per year. The replacement is instantaneous and no shortages are allowed. What will be the total cost in per year if the cost of one unit is Rs. 1?
Option A:	4200
Option B:	3500
Option C:	3120
Option D:	3849

Q2	**Solve any four** **5 marks each**
A.	A branch of Canara Bank has only one typist. Since the typing work varies in length (number of pages to be typed), the typing rate is randomly distributed approximating a Poisson distribution with mean service rate of 8 letters per hour. The letters arrive at a rate of 5 per hour during the entire 8-hour work day. If the typewriter is valued at Rs. 1.50 per hour, determine—Equipment utilization, average cost due to waiting on the part of typewriter i.e it remaining idle.

B.	A company manufactures around 200 mopeds. Depending upon the availability of raw materials and other conditions, the daily production has been varying from 196 to 204 mopeds, whose probability distribution is as given below:	

Production/day	196	197	198	199	200	201	202	203	204
Probability	0.05	0.09	0.12	0.14	0.20	0.15	0.11	0.08	0.06

The finished mopeds are transported in a specifically designed three-storeyed lorry that can accommodate only 200 mopeds. Using the following 15 random numbers 82,89,78,24,53,61,18,45,04,23,50,77,27,54 and 10, simulate the process to find out what will be the average number of mopeds waiting in the factory?

C. A firm has divided its marketing area into three zones. The amount of sales depends upon the number of salesman in each zone. The firm has been collecting the data regarding sales and salesman in each area over a number of past years. The information is given as below.

No. of Salesman	Zone 1	Zone 2	Zone 3
0	30	35	42
1	45	45	54
2	60	52	60
3	70	64	70
4	79	72	82
5	90	82	95
6	98	93	102
7	105	98	110
8	100	100	110
9	90	100	110

For the next year firm has only 9 salesman and the problem is to allocate these salesman to three different zones so that the total sales are maximum.

D.	An aircraft company uses rivets at an approximate customer rate of 2,500kg per year. Each unit costs Rs. 30 per kg and the company personnel estimate that it costs Rs. 130 to place an order, and that the carrying cost of inventory is 10 percent per year. How frequently should orders for rivets be placed? Also, determine the optimum size of each order.
E.	A and B play a game in which each has three coins a 5p, a 10p and a20p. Each player selects a coin without the knowledge of the other's choice. If the sum of the coins is an odd amount, A wins B's coin; if the sum is even, B wins A's coin. Find the best strategy for each player and the value of the game.
F.	Write the dual of the LPP: Maximise $\qquad Z = 30x_1 + 23x_2 + 20x_3$ Subject to, $\qquad 6x_1 + 5x_2 + 3x_3 \le 26$ $\qquad\qquad\quad 4x_1 + 2x_2 + 5x_3 \le 7$ Where $\qquad\qquad x_1, x_{2,} x_3 \ge 0$

Q3	Solve any Two $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ **10 marks each**
A.	Solve the following LPP: Maximise $\qquad Z = 4x_1 + x_2 + 3x_3 + 5x_4$ Subject to, $\qquad 4x_1 - 6x_2 - 5x_3 - 4x_4 \ge -20$ $\qquad\qquad\quad -3x_1 - 2x_2 + 4x_3 + x_4 \le 10$ $\qquad\qquad\quad -8x_1 - 3x_2 + 3x_3 + 2x_4 \le 20$ Where $\qquad\qquad x_1, x_{2,} x_{3,} x_4 \ge 0$
B.	Four jobs 1, 2, 3 and 4 are to be processed on each of the five machines A, B, C,D and E in the order ABCDE. Find the total minimum elapsed time if no passing of jobs is permitted and determine idle time for each machine.

Job	Machine A	Machine B	Machine C	Machine D	Machine E
1	7	5	2	3	9
2	6	6	4	5	10
3	5	4	5	6	8
4	8	3	3	2	6

C   Find initial basic feasible solution by VAM and optimal solution by MODI method:

	Warehouse A	Warehouse B	Warehouse C	Availability
Factory F1	8	7	3	60
Factory F2	3	8	9	70
Factory F3	11	3	5	80
Demand	50	80	80	

University of Mumbai
Examination 2021 under clusterALL (Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL**
Curriculum Scheme: R2016
Examination: BESemester VII
Course Code: ILO7015 and Course Name: Operations Research

Time: 2 hour   Max. Marks: 80

==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	B
Q3.	D
Q4	A
Q5	B
Q6	B
Q7	D
Q8.	A
Q9.	C
Q10.	B
Q11.	B
Q12.	D
Q13.	B
Q14.	D
Q15.	C
Q16.	B
Q17.	B
Q18.	A
Q19.	B
Q20.	A

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 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 hours   Max. Marks: 80

===

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which is not an element of information security ?
Option A:	Confidentiality
Option B:	Integrity
Option C:	Authentication
Option D:	Standardization
2.	Cyber -vandalism is
Option A:	Using cyber-technology in unauthorized ways to reproduce copies of propriety software and proprietary information
Option B:	To distribute proprietary information across a network
Option C:	Using cyber-technology to gain unauthorized access to an individual's or organization's computer system.
Option D:	Using cyber-technology to unleash one or more programs that disrupt the transmission of electronic information across one or more computer networks, including the Internet.
3.	Which of the following is a non-violent cybercrime ?
Option A:	Internet gambling
Option B:	Cyberstalking
Option C:	Piracy
Option D:	Identity theft
4.	By Salami Attack virus we mean:
Option A:	Trapdoors persist
Option B:	Control viruses
Option C:	A small amount of money is shaved from each computation
Option D:	Poor error checking
5.	For attacking the database of a system / website which method is used by the criminals.
Option A:	HTML injection
Option B:	SQL Injection
Option C:	Malicious code injection

Option D:	XML Injection
6.	If you are contacted via telephone by someone posing to represent a financial institution you do business with and are asked to provide or update personal or account information, you should:
Option A:	Give all your confidential and personal data to them
Option B:	Ask to speak to a senior supervisor
Option C:	Hang up!
Option D:	Hang up and find the phone number of that institution in one of your account statements, credit cards or their verifiable website address and call that number to check on the request.
7.	If a user's session is compromised by another person with the intention of either misuse of the user's credentials without his/her knowledge or exploiting the user's data and perform malicious activities is called _____
Option A:	Social engineering
Option B:	Session hijacking
Option C:	Cookie stuffing
Option D:	Baiting
8.	The first step in hacking is _____
Option A:	Remote attack
Option B:	Port scanning
Option C:	Reconnaissance
Option D:	Clear logs
9.	_____ is a technique of hiding confidential information inside a picture?
Option A:	Image processing
Option B:	Stenography
Option C:	Key loggers
Option D:	DoS attack
10.	The purpose of a Denial of Service attack is _____ .
Option A:	To overload a system so that it is no longer operational
Option B:	To shutdown services by turning them off
Option C:	To crack the password of a system
Option D:	To assess the vulnerabilities
11.	Comparing the value of the canary with the original value, can help one identify if a _____ has occurred.
Option A:	DDoS
Option B:	Nuking
Option C:	Buffer overflow
Option D:	Block cipher
12.	This type of contract is used for online services like creating a new e-mail account. This contract is known as
Option A:	Shrink wrap contract

Option B:	Click wrap contract
Option C:	Browse wrap contract
Option D:	Void contract
13.	Digital Signature Certificate is _____ requirement under various applications
Option A:	Statutory
Option B:	Legislative
Option C:	Governmental
Option D:	Voluntary
14.	Which of the following cannot be exploited by assigning or by licensing the rights of others.
Option A:	Patent
Option B:	Design
Option C:	Trademark
Option D:	Copyright
15.	Which is the Act which provides legal framework for e-Governance in India
Option A:	IT (amendment) Act 2008
Option B:	Indian Penal Code
Option C:	IT Act 2000
Option D:	Indian Evidence Act, 1872
16.	Which following Act was not amended in Information Technology Act 2000 ?
Option A:	The Bankers Books Evidence Act, 1891
Option B:	BSNL IT Policy
Option C:	RBI Act 1934.
Option D:	The Indian Evidence Act, 1872
17.	The punishment for hacking of computers under ITAA 2008?
Option A:	Fine up to ten lakhs or imprisonment up to three years or both
Option B:	Fine up to five lakhs or imprisonment up to three years or both
Option C:	Fine up to five lakhs or imprisonment up to five years or both
Option D:	Fine up to ten lakhs or imprisonment up to five years or both
18.	Companies are required to disclose on an almost real time basis he information concerning material changes in its financial conditions or operations. Which is this key provision?
Option A:	SOX section 302
Option B:	SOX section 404
Option C:	SOX section 409
Option D:	SOX section 806
19.	_____ is a type of program that is installed with or without your permission or knowledge on your personal computer to collect information about users. It tracks every activity of the user including their browsing habits and sends them to a remote user.

Option A:	Adware
Option B:	Spyware
Option C:	Virus
Option D:	Worm
20.	To protect mobile phones from viruses , one should not
Option A:	Update system and application software
Option B:	Disable Bluetooth, infrared or Wi-Fi when they are not in use
Option C:	Be cautious while opening e-mail and text message attachments and clicking links
Option D:	Join unknown public Wi-Fi networks

Q.2	
A	**Solve any Two** **5 marks each**
i.	Explain cyber defamation.
ii.	Write a note on classification of cybercrime.
iii.	Differentiate between virus and worms.
B	**Solve any One** **10 marks each**
i.	Is your data safe on cloud ? Justify your answer.
ii.	Explain SQL injection attack? State different countermeasures to prevent the attack.
Q.3	
A	**Solve any Two** **5 marks each**
i.	What is intellectual property? What are the different types of intellectual property ?
ii.	Mention the key IT requirements of FISMA.
iii.	Identify the type of E-commerce category for the following websites : A) www.bigbasket.com B) www. IndiaMART.com C) www.Olx.in D) www.Freelancer.com E) https://indianvisaonline.gov.in
B	**Solve any One** **10 marks each**
i.	The way banking operations are conducted has changed tremendously with the development of technology. Explain this statement by discussing various electronic banking services provided by the banks in India.
ii.	What is the Indian Information Technology Act,2000? Explain it's objectives and features?

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 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
===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	D
Q3.	A
Q4	C
Q5	B
Q6	D
Q7	B
Q8.	C
Q9.	D
Q10.	A
Q11.	C
Q12.	B
Q13.	A
Q14.	C
Q15.	C
Q16.	B
Q17.	B
Q18.	C
Q19.	B
Q20.	D

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.	Hazards can be prioritized by:
Option A:	Manageability, Urgency, Growth, Seriousness
Option B:	Urgency, Manageability, Seriousness, Growth
Option C:	Growth, Manageability, Urgency, Seriousness
Option D:	Seriousness, Manageability, Urgency, Growth
2.	_____ can be defined as threat to life, health, property, and environment.
Option A:	Hazards
Option B:	Vulnerability
Option C:	Disaster
Option D:	Risk
3.	Urbanization usually results in an increase in flood frequency because :
Option A:	Less water can runoff in streams
Option B:	Less water can infiltrate into the ground, so instead is discharged rapidly into streams
Option C:	More water is used by humans and then discharged to streams
Option D:	Rainfall is greater in urban areas than in rural areas
4.	The cycle of disaster consists of the following components:
Option A:	Mitigation, Preparedness, Response, Recovery
Option B:	Preparedness, vulnerability assessment, risk assessment, recovery
Option C:	Mitigation, Risk assessment, Response and Recovery
Option D:	Mitigation, vulnerability assessment,Response and Recovery
5.	Which of the following is not part of geological disaster?
Option A:	Volcanoes
Option B:	Earthquake
Option C:	Tsunami
Option D:	Sea surge
6.	Pandemic disease is defined as:

Option A:	Outbreak of a disease in international scale
Option B:	Outbreak of a disease beyond the area of a disease
Option C:	Congestion in urban areas.
Option D:	Outbreak of a disease in local area
7.	The primary goal of a disaster preparedness plan is:
Option A:	To protect the population
Option B:	To protect valuable resources
Option C:	To keep communications lines open
Option D:	To protect environmental health personnel
8.	Which of the following is not the causes of manmade disaster?
Option A:	Technological
Option B:	Transportation
Option C:	Landslides
Option D:	Production errors
9.	Which of the following coordinate the research activities in different aspects of management at national level?
Option A:	CDM
Option B:	National center for disaster management
Option C:	NICEE
Option D:	Disaster management institute
10.	Various types of funds have been created under which legal frame work
Option A:	Disaster Management Act 2005
Option B:	Disaster Management Act 2006
Option C:	Disaster Management Act 2002
Option D:	National Plan 2008
11.	Which of the following organizations is the apex authority of disaster management in India?
Option A:	NDA
Option B:	NDMA
Option C:	CDMA
Option D:	INDR
12.	The Richter scale expresses an earthquake
Option A:	Magnitude
Option B:	Location
Option C:	Duration
Option D:	Depth
13.	The technique of acquisition of information about an object or phenomenon without being physical contact with the object.
Option A:	Data acquisition
Option B:	Remote Sensing

Option C:	Management system
Option D:	Image processing
14.	What is called for the manuals that identify the role of each officer in State for managing the natural disasters?
Option A:	State Relief Manuals
Option B:	State Environmental Protection Manuals
Option C:	State Disaster Manuals
Option D:	State Protection Manuals
15.	An extreme natural phenomenon capable of causing disaster leading to loss of lives or damage to property is known as-
Option A:	Natural hazard
Option B:	Hazard calculation
Option C:	Desertification
Option D:	Risk
16.	Which of the following sentence about insurance is not true?
Option A:	Insurance guarantees fixed compensation amount prior
Option B:	Insurance market of India is in developed stage, there is no limitations on the cover under insurance for natural disaster.
Option C:	Insurance is limited to major industrial and commercial properties.
Option D:	Role of insurance agencies in disaster management needs to be given more importance.
17.	The National Disaster Management Authority (NDMA) is headed by:
Option A:	Prime Minister of India
Option B:	President of India
Option C:	Governor of States
Option D:	Chief Minister of States
18.	International Tsunami information Center is located in
Option A:	Honolulu
Option B:	Goa
Option C:	Jakarta
Option D:	Puducherry
19.	What is the main role of Government Agencies in Disaster Relief Funding
Option A:	The financial assistance to meet the rescue & relief expenditure during any disaster
Option B:	To build houses in different disasters
Option C:	To advice state government how to manage various disasters
Option D:	To act as common platform for Central & State Government
20.	Who is the Chairperson of NEC, National Executive Committee?
Option A:	Home Secretary
Option B:	Finance Secretary
Option C:	Home Minister
Option D:	Finance Minister

Q2.	Solve any Four out of Six 5 marks each
A	Write a short note on direct and indirect effects of disaster.
B	Describe any 4-natural disaster in brief.
C	Explain objectives of disaster management policy.
D	Write a short note on DM act.
E	Write a short note on role of media in effective disaster management.
F	Explain Community base disaster preparedness.

Q3.	Solve any Four out of Six 5 marks each
A	Define hazards and also brief about modes and causes of hazards.
B	Explain the role of growing population in frequent occurrences of manmade disasters.
C	Draw and explain phases of Disaster Management cycle.
D	Write a short note on advantages of GIS and any one application of GIS in disaster management.
E	Write a short note on various activities conducted by SDMA.
F	Explain in detail pre- disaster and post disaster measures.

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL_Institute Level Optional Course 1**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO 7017
Course Name: Disaster Management and Mitigation Measures

Time: 2 hour   Max. Marks: 80

==

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	A
Q3.	B
Q4	A
Q5	D
Q6	A
Q7	A
Q8.	C
Q9.	B
Q10.	A
Q11.	B
Q12.	A
Q13.	B
Q14.	A
Q15.	A
Q16.	B
Q17.	A
Q18.	A
Q19.	A
Q20.	A

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

==

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Choose an incorrect form of natural gas as energy source.
Option A:	Nitrogen
Option B:	LPG
Option C:	LNG
Option D:	CNG
2.	Which of the following power generation type have very least share in India's total installed capacity? (Ref. year Feb2014)
Option A:	Thermal
Option B:	Hydro-electric
Option C:	Nuclear
Option D:	Renewable
3.	In which sector the energy consumption is highest in India?
Option A:	Agriculture
Option B:	Transport
Option C:	Residential
Option D:	Industry
4.	The energy management aims at producing goods and provide services with
Option A:	only the least environmental effect
Option B:	Only the least cost
Option C:	least cost and least environmental effect
Option D:	either least cost or least environmental effect
5.	The type of Energy Audit to be performed depends on:
Option A:	Cost of energy
Option B:	Depth to which final audit is needed
Option C:	The type of Fuel used in Industries
Option D:	Manpower in an Industry
6.	Understanding energy cost is important factor for :
Option A:	Improving system Efficiency
Option B:	Awareness creation and Saving calculation
Option C:	For manpower calculation

Option D:	For material procurement
7.	Penalties were imposed in HT Electricity bills before 1st April 2020 due to:
Option A:	Crossing Maximum Demand
Option B:	Not maintaining Power Factor above specified value
Option C:	Both for crossing maximum demand and non-maintaining power factor above specified value
Option D:	Not maintaining the duration of Electricity use
8.	Plant energy performance (PEP) is the measure of:
Option A:	Material getting used in an Industry
Option B:	Manpower utilization in an Industry
Option C:	How well the energy management programme is doing
Option D:	Utilization of resources available
9.	A utility bill shows an average pf of 0.72 with average KW of 627.How much KVAr is required to improve pf to 0.95
Option A:	425KVAr
Option B:	336 KVAr
Option C:	398 KVAr
Option D:	192 KVAr
10.	Capacitors with automatic power factor controller when installed in a plant:
Option A:	Reduces the voltage of the plant
Option B:	Reduces the reactive power drawn from grid
Option C:	Reduces active power drawn from grid
Option D:	Increases the load current of the plant
11.	The following function **cannot** be achieved with automatic power factor controllers.
Option A:	KVAr control
Option B:	kW control
Option C:	PF control
Option D:	Voltage control
12.	The material used for core of Energy efficient transformer is
Option A:	Cold Rolled Gain Oriented Steel
Option B:	Silicon alloyed iron(grain oriented)
Option C:	Copper
Option D:	Amorphous core - metallic glass alloy
13.	The characteristic of conventional ballast in lighting application is one among the following:
Option A:	They have low operational losses than electronic ballasts
Option B:	They do not require a mechanical switch (starter)
Option C:	They have tuned circuit to deliver power at very high frequency
Option D:	They have high operational losses and high temperature rise
14.	Following is NOT the property of Soft starter
Option A:	less Mechanical stress
Option B:	Improved Power factor

Option C:	Lower maximum demand
Option D:	High Mechanical stress
15.	Length of interior, Width of interior and the mounting height are required to calculate..
Option A:	Lux level
Option B:	Colour Rendering Index
Option C:	Power in watts
Option D:	Room Index
16.	Which of the following lamps has the maximum lamp efficiency in lumens/Watt?
Option A:	Metal Hallide
Option B:	HPSV
Option C:	Incandescent
Option D:	Fluorescent
17.	Slip method for measurement of motor loading has disadvantage of
Option A:	High cost
Option B:	Large time required
Option C:	Less accuracy
Option D:	More calculations
18.	Which of the following produces energy because of temperature difference at various levels in ocean
Option A:	Tidal energy
Option B:	Wave energy
Option C:	Solar energy
Option D:	Ocean thermal energy
19.	What percentage of the sun's energy falling on a silicon solar panel gets converted into electricity?
Option A:	Around 35
Option B:	Around 15
Option C:	Around 75
Option D:	Around 50
20.	Identify the type of steam if it floats out intermittently in a whitish cloud
Option A:	Leaking steam
Option B:	Flash steam
Option C:	Cloud steam
Option D:	Superheated Steam

Q2	
A	**Solve any Two** **5 marks each**
i.	Explain any five features of Energy Conservation Act 2001
ii.	Define monitoring and targeting. Explains elements of M & T system.
iii.	Explain demand charges and TOD tariff.
B	**Solve any One** **10 marks each**

i.	Explain general fuel economy measures in boilers.
ii.	A 415 V, 20kW, 3-ph, 50Hz Induction motor operates at full load, with 86% efficiency and 0.85 power factor lagging: a) Find the current drawn by the motor b) If this motor is replaced by 92% energy efficient motor of same capacity with 0.88 power factor, what will be the power savings in terms of kW. If annual working hours of that motor are 7000 and rate of electricity is Rs.10 per Kwh, find annual energy saving.
Q3	
A	**Solve any Two** **5 marks each**
i.	List any Five Energy Conservation opportunities in lighting system
ii.	Explain step by step approach of electrical load management.
iii.	What are the advantages of green buildings and state 3 examples of green buildings in India?
B	**Solve any One** **10 marks each**
i.	Explain energy saving opportunities in steam distribution systems.
ii.	Find ILER for the industrial illumination system where colour rendering in not essential. Average lux level measured 500lux. Room dimensions 9m*4m*4m. Fixtures are suspended from ceiling at 0.5m. Height of work plane is 0.8m. There are 10 tube lights of 52W each in the room. Suggest the measure if required and find annual wastage if any, If lamps are used for 8 hours a day and 300 days in a year. The room index and associate target lux/W/m^2 for the mentioned system is as follows

Room Index	Target lux/W/m^2
1	52
1.25	55
1.5	58
2	61
2.5	64
3	65
4	66
5	67

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 2021
Program: **ALL_Institute Level Optional Course 1**
Curriculum Scheme: Rev2016
Examination: BE Semester VII
Course Code: ILO 701**8** and Course Name: EAM

Time: 2 hour   Max. Marks: 80

===

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	D
Q4	C
Q5	B
Q6	B
Q7	C
Q8.	C
Q9.	C
Q10.	B
Q11.	B
Q12.	D
Q13.	D
Q14.	D
Q15.	D
Q16.	B
Q17.	C
Q18.	D
Q19.	B
Q20.	B

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 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

===
===
=

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Why did Gandhiji advocate decentralization
Option A:	It weakens the state
Option B:	It brings power to the people
Option C:	It is an alternative to Parliamentary democracy
Option D:	All of the above
2.	Which constitutional amendments give recognition and protection to local government
Option A:	64th and 65th
Option B:	73rd and 74th
Option C:	69th and 70th
Option D:	83rd and 84th
3.	Social ethics
Option A:	Defines behaviour of people in society
Option B:	Examines ethics in business environment
Option C:	Are moral principles that guide religion
Option D:	Based on individual's belief of right and wrong
4.	Development Engineering encompasses the following fields
Option A:	Economics
Option B:	Social sciences
Option C:	Engineering
Option D:	All of the above
5.	The term Panchayati Raj signifies (1) urban local self government,(2) rural local self government. Which of the following is true
Option A:	1 only
Option B:	2 only
Option C:	both
Option D:	none
6.	Infant mortality

Option A:	is defined as the annual number of deaths of infant under 1 year old per 1,000 live births.
Option B:	reflects the availability of primary education, the rights of employment and social security.
Option C:	is life expectancy up to age 3.
Option D:	reflects the availability of hospitals and childcare facilities, and the parents' wealth.
7.	Which is not a terminology associated with Development Engineering
Option A:	Engineering for Design
Option B:	Engineering for change
Option C:	Humanitarian engineering
Option D:	Engineering for impact
8.	Consider the following statements regarding Human Development Index (HDI): I. The Human Development Index (HDI) is a composite index that measures the average achievements in a country in three basic dimensions of human development. II. The basic dimensions are a long and healthy life, knowledge and a decent standard of living. Which of the following statement(s) is/are correct?
Option A:	Only I
Option B:	Only II
Option C:	Both I, II
Option D:	Neither I,II
9.	To which type of engineers can code of ethics conceived by professional engineering societies be of any use
Option A:	Engineers who are licensed professionals
Option B:	Engineers who belong to professional engineering societies
Option C:	Engineers who are working in Public Sector Enterprise
Option D:	All those people who engage in engineering practice
10.	Which of the following statements is correct regarding 73rd amendment (1) Added eleventh schedule to the constitution (2) Added a new part-IX to the constitution of India, entitled as the Panchayats (3) Gives constitutional status to the PRI (4) Significant landmark in the evolution of grass root democratic institutions in the country
Option A:	1,2,3
Option B:	1,2.4
Option C:	2,3,4
Option D:	1,2,3,4
11.	What are the possible ethical dilemma that a whistleblower can face (1) Public interest vs. private interest (2) Citizenship vs. employment(3) Private benefit vs. employers benefit(4) Short term view vs. Long term view
Option A:	1,2,4
Option B:	1,3,4
Option C:	1,2,3
Option D:	1,4

12.	Which of the following criteria for judging whether proposed research involving human subjects is ethically sound?(1) Risk to subject are minimized (2)Risks are reasonable compared to anticipated benefits (3) Prior informed consent will be obtained from subjects (4) Subjects privacy and confidentiality will be maintained. Which of the following is correct?
Option A:	1,2
Option B:	1,3,4
Option C:	1,2,3,4
Option D:	1,3
13.	Which of the following statements are true about values (1) People are always aware of their values (2) Values are the links between needs and action,(3)Moral values are the most fundamental form of values (4) Values are the basis of emotions
Option A:	1,2,3
Option B:	2,3,4
Option C:	1,2,3,4
Option D:	2,4
14.	Panchayati Raj in India was first introduced in 1959 in which state
Option A:	Rajasthan
Option B:	Kerala
Option C:	Tamil Nadu
Option D:	West Bengal
15.	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
16.	Which of the following statements is the most correct description of the relationship between humans and technology
Option A:	Technology impacts upon human action and human beings
Option B:	Human beings" act on, use, make" technology
Option C:	Technology provides apparatus for human action
Option D:	Technology hijacks human autonomy
17.	(1) In Panchayat seats are reserved for SC, ST and women but not for backward classes of citizens (2) Not less than 1/3 of the seats are reserved for women including number of seat reserved for women of SC and ST. Which of these statements is true
Option A:	Only 1
Option B:	Only 2
Option C:	Both
Option D:	none
18.	Which state first reserved 50% seats for women

Option A:	Andhra Pradesh
Option B:	Uttar Pradesh
Option C:	Madhya Pradesh
Option D:	Bihar
19.	Which statement is not correct regarding Gram Sabha
Option A:	It is a body consisting of persons registered in the electoral rolls of a village comprised within the area of the Panchayat level.
Option B:	It is a village assembly consisting of all the registered voters in the area of the Panchayat.
Option C:	Its powers have been determined by the Central Government
Option D:	Its powers and functions at village level are like state legislature at the state level
20.	Which of the following description best describes the principles concerning professional ethics
Option A:	Professional duties must be judged by ethical standards independent of time, place and circumstance
Option B:	Judging professional duties always involves reciprocal adjustment between ends and means
Option C:	Professional duties must by nature be deontological, i.e. he end must not come at the cost of the means
Option D:	Professional duties must be judged only by what they achieve in line with the ends prescribed by the ideals of business

Q2	Solve any Four out of Six 5 marks each
A	As an engineer give your opinion on "Is the use of and development of nuclear power plant ethical?
B	Explain the Gandhian philosophy of rural development
C	List some problems and challenges faced by cooperatives today
D	Discuss the cannons of engineering ethics
E	Explain the four pillars of Smart city
F	Corporates become profitable at the cost of ethics. Argue in favour or against the statement and provide examples to justify your arguments

Q3	Solve any Four out of Six 5 marks each
A	What is the concept of Community development
B	Give high lights of Balwant Rai Mehta committee report of 1957
C	Explain the Gandhian philosophy of rural development

D	Define Ethics, Ethical Dilemma
E	What are the functions of women cooperatives?
F	What is a gram sabha and how does it contribute to the development of a village

University of Mumbai
Examination 2021 under cluster ALL (Lead College: VCET)
Examinations Commencing from 15th June 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

==
==
=

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	B
Q3.	A
Q4	D
Q5	B
Q6	A
Q7	A
Q8.	C
Q9.	D
Q10.	D
Q11.	C
Q12.	C
Q13.	B
Q14.	A
Q15.	C
Q16.	C
Q17.	C
Q18.	D
Q19.	C
Q20.	B