UNIVERSITY OF MUMBAI

CURRICULUM SCHEME R2016

EXAMINATION: FINAL YEAR SEMESTER VII

COURSE CODE ILO7019 COURSE NAME : DEVELOPMENT ENGINEERING

TIME: 1 Hr Marks 50

QUESTION PAPER-1

	QUESTION		Answer
Q.No.1	The 73rd amendment Act pertains to which of the following		**B**
Option A	Statehood of Delhi		
Option B	Panchayti Raj Institutions		
Option C	Municipalities		
Option D	Land reforms		
Q.No.2	The Panchayati Raj is included in the		**B**
Option A	Union list		
Option B	State list		
Option C	Concurrent list		
Option D	Residuary list		
Q. No.3	Which of the following was the first committee on Panchayati raj in India		**A**
Option A	Balwant Rai Mehta		
Option B	Ashok Mehta		
Option C	L.M.Singhvi		
Option D	S. Mohinder Singh		
Q.No.4	Which of these is a factor that affects ethical and unethical behaviour		**A**
Option A	Ethical dilemma		
Option B	Diversity		
Option C	Teamwork		
Option D	Open communication		**C**
Q. No.5	When is National Panchayati Day celebrated		
Option A	23rd December		
Option B	1st June		
Option C	24th April		
Option D	15th September		
Q.No.6	Those individuals who raise ethical concerns to others inside or outside the organisation are called		**B**
Option A	Entrepreneur		
Option B	Whistle blower		
Option C	Social entrepreneur		
Option D	Social impact management		
Q.No.7	The term that refers to principles, values, beliefs that define right or wrong behaviour is		**C**
Option A	Customer satisfaction		
Option B	Innovation		
Option C	Ethics		
Option D	Empowerment		

Q.No8	Which of the following principles is the essential principle of utilitarian school of ethics		**B**
Option A	Greatest health principle		
Option B	Greatest Happiness principle		
Option C	Greatest wealth principle		
Option D	Greatest respect principle		
Q.No9	Which of the following is an appropriate general principle with regard to engineering ethics		**A**
Option A	The engineer shall regard his duty to the public welfare as paramount to all other obligations		
Option B	The engineer shall regard his duty to the objectives of the company as paramount to all other obligations		
Option C	The engineer shall regard his duty to the Profession of engineering as paramount to all other obligations		
Option D	The engineer shall regard his duty to his excellence as paramount to all other obligations		
Q.No10	Which of the following statements is the most correct description of the relationship between humans and technology		**C**
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		
Q.No 11	Which of the following elements must always be in the mind of the engineer while performing his duties vis-a-visEthics (1)public safety, (2) economy, (3) health, (4) welfare		**D**
Option A	1,2,3		
Option B	1,2,3,4		
Option C	1,4		
Option D	1,3,4		
Q.No 12	73rd amendment gave practical shape to which article of the constitution		**C**
Option A	Article 14		
Option B	Article 32		
Option C	Article 40		
Option D	Article 51		
Q.No 13	Which one of the following is not correct ?		**C**
Option A	Growth is quantitative and value neutral		

Option B	Development means a qualitative change which is always value positive		
Option C	Positive growth and development refer to changes over a period of time		
Option D	Both growth and development refer to changes over a period of time.		
Q.No 14	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		**C**
Option A	1,2,3		
Option B	2,3,4		
Option C	1,3,4		
Option D	1,2,4		
Q.No 15	The multi-dimensional poverty index is a measure developed by the		**D**
Option A	UNCTAD		
Option B	World Bank		
Option C	International Monetary Fund IMF		
Option D	Oxford poverty and human development initiative , OPHDI , and the UNDP		
Q.No 16	Which state has no Panchayati Raj Institution at all		**A**
Option A	Mizoram		
Option B	Manipur		
Option C	Arunachal Pradesh		
Option D	Tripura		
Q.No 17	Which state first reserved 50% setas for women		**D**
Option A	Andhra Pradesh		
Option B	Uttar Pradesh		
Option C	Madhya Pradesh		
Option D	Bihar		
Q.No 18	Which of the following system is established on the basis of direct election		**A**
Option A	Gram Panchayat		
Option B	Block Committee		
Option C	Zila Parishad		
Option D	District		
Q.No 19	The following is true about khap panchayat		**A**
Option A	based on caste system		
Option B	Consists of elected representatives		
Option C	Are constitutional bodies		
Option D	Follow rule of law of the land		
Q.No 20	In which five year plan the Panchayat Raj System was introduced in India for the first time		**B**

Option A	First		
Option B	Second		
Option C	Fifth		
Option D	Sixth		
Q.No 21	Which of the following years has been declared year of Gram Sabha		**B**
Option A	2008-09		
Option B	2009-10		
Option C	2011-12		
Option D	2012-13		
Q.No 22	Engagement of local people in development project refers to		**C**
Option A	Economic development		
Option B	Socila development		
Option C	Participatory development		
Option D	Sustainable development		
Q.No 23	Panchayati Raj system is based on the vision of		**B**
Option A	Pandit Jawaharlal Nehru		
Option B	Mahatma Gandhi		
Option C	Lal Bahadur Shastri		
Option D	Sardar Patel		
Q.No 24	Panchayats are constituted for		**B**
Option A	four years		
Option B	five years		
Option C	six years		
Option D	three years		
Q.No 25	The G.V.K.Rao committee was appointed by		**B**
Option A	Government of India		
Option B	Planning Commission		
Option C	Block development office		
Option D	Zilla Parishad		

Q=QUESTION	question_description	question_explanation	question_type	question_difficulty
A=ANSWER	answer_description	answer_explanation	answer_isright	answer_position
Q	Which of them is not a wireless attack?		M	1
A	Eavesdropping		0	1
A	MAC Spoofing		0	2
A	Wireless Hijacking		0	3
A	Phishing		1	4
Q	Who deploy Malwares to a system or network?		M	1
A	Criminal organizations, Black hat hackers, malware developers, cyber-terrorists		1	1
A	Criminal organizations, White hat hackers, malware developers, cyber-terrorists		0	2
A	Criminal organizations, Black hat hackers, software developers, cyber-terrorists		0	3
A	Criminal organizations, gray hat hackers, Malware developers, Penetration testers		0	4
Q	Compromising confidential information comes under_____		M	1
A	Threat		1	1
A	Bug		0	2
A	Vulnerability		0	3
A	Attack		0	4
Q	What is the best option for thwarting social-engineering attacks?		M	1
A	Technology		0	1
A	Training		1	2
A	Policies		0	3
A	Physical controls		0	4
Q	Botnets are managed by _____		M	1
A	Bot-holders		0	1
A	Bot-herders		1	2
A	Bot-trainers		0	3
A	Bot-creators		0	4
Q	_____ is a code injecting method used for attacking the database of a system / website.		M	1
A	HTML injection		0	1
A	SQL Injection		1	2
A	Malicious code injection		0	3
A	XML Injection		0	4
Q	Try not to keep _____ passwords, especially fingerprint for your smart-phone, because it can lead to physical hacking if you're not aware or asleep.		M	1
A	Biometric		1	1
A	PIN-based		0	2
A	Alphanumeric		0	3
A	Short		0	4

Q	By default, Bluetooth devices operate in which security mode?		M	1
A	Mode 1; "non-secure" mode		1	1
A	Mode 2; leaving security up to each application.		0	2
A	Mode 3; enforce link encryption for all traffic.		0	3
A	Mode 4; security settings default to a mobile policy server.		0	4
Q	Which of the following is NOT real security threat?		M	1
A	Virus		0	1
A	Worms		0	2
A	Spam		1	3
A	Trojans		0	4
Q	A small piece of code used as a payload in the exploitation of software vulnerability, is called as _____		M	1
A	Assembly code		0	1
A	Shell code		1	2
A	C and C++ code		0	3
A	Malicious code		0	4
Q	If you fall for a phishing scam, what should you do to limit the damage?		M	1
A	Change Username		0	1
A	Delete the phishing email.		0	2
A	Unplug the computer. This will get rid of any malware		0	3
A	Change any compromised passwords		1	4
Q	What kind of attempts is made by individuals to obtain confidential information from a person by falsifying their identity?		M	1
A	Phishing		1	1
A	Computer viruses		0	2
A	Spyware		0	3
A	Malware		0	4
Q	Phishers often develop _____ websites for tricking users & filling their		M	1
A	Legitimate		0	1
A	Illegitimate		1	2
A	Genuine		0	3
A	Official		0	4
Q	_____ is a generic term which refers to all the legal and regulator aspects of Internet and the World Wide Web		M	1
A	Cyber law		1	1
A	Cyber dyne		0	2
A	Cyber café		0	3
A	Electronic law		0	4

Q	Which factor determines when your IT system will be available for knowledge workers to access?		M	1
A	Reliability		0	1
A	Accessibility		0	2
A	Availability		1	3
A	Admissibility		0	4
Q	Accessing data without permission is known as.....		M	1
A	unlawful access		0	1
A	Illegal Access		0	2
A	Legal Access		0	3
A	Unauthourized Access		1	4
Q	____ is the application of information and communication technology (ICT) for delivering government services		M	1
A	Governance		0	1
A	Governance and ethics		0	2
A	Electronic governance		1	3
A	Risk and governance		0	4
Q	The following cannot be exploited by assigning or by licensing the rights to others		M	1
A	Patents		0	1
A	Designs		0	2
A	Trademark		1	3
A	Ownership		0	4
Q	When IT Act 2000 came into effect?		M	1
A	17 October,2000		1	1
A	11 November,2000		0	2
A	17 October,2001		0	3
A	11 November,2001		0	4
Q	Which section of IT Act deals with Hacking of computer systems and its penalties?		M	1
A	Section 65		0	1
A	Section 66		1	2
A	Section 67		0	3
A	Section 69		0	4
Q	Which are the sections of IT Act applicable for Cyber pornography?		M	1
A	66, 66A, 66B		0	1
A	67, 67A, 67B		1	2
A	67, 67C, 67D		0	3
A	43, 43D, 69D		0	4
Q	Penalty for Breach of confidentiality and privacy is defined in section ----		M	1
A	71		0	1
A	72		1	2
A	73		0	3
A	74		0	4
Q	Sarbanes-Oxley Act (SOX) is used for		M	1
A	to stop hacking		0	1

A	protect equity shares		0	2
A	protect employee		0	3
A	To protect shareholders and the general public from accounting errors and fraudulent practices in enterprises		1	4
Q	HIPPA Act of 1996 stands for _____		M	1
A	Health Insurance Policy and Administration Act		0	1
A	Health Insurance Policy and Accountability Act		0	2
A	Health Insurance Portability and Administration Act		0	3
A	Health Insurance Portability and Accountability Act		1	4
Q	NERC Stands for_____		M	1
A	North African Electric Reliability Corporation		0	1
A	North American Electric Reliability Corporation		1	2
A	North American Electronic Reliability Corporation		0	3
A	North American Electric Regularatory Corporation		0	4

Q=QUESTION A=ANSWER	question_description answer_description	question_explanation answer_explanation	question_type answer_isright	question_difficulty answer_position
Q	_____ analyzes customer data for designing and executing targeted marketing campaigns.		M	1
A	Analytical CRM		1	1
A	Operational CRM		0	2
A	Collaborative CRM		0	3
A	Transactional CRM		0	4
Q	Cybersquatting refers to the practice of_____		M	1
A	Using someone else's domain names for profiting from their goodwill		1	1
A	Buying competitors information for profiting		0	2
A	Using illegal means to crash competitor's website		0	3
A	Selling competitors information for profiting		0	4
Q	Social computing forces companies to deal with customers _____		M	1
A	Reactively		0	1
A	Proactively		1	2
A	Neutrally		0	3
A	Economically		0	4
Q	Electronic commerce systems generally includes all of the following except:		M	1
A	Internet websites for online sales		0	1
A	Extranet access of inventory databases		0	2
A	Direct links to credit reporting services		1	3
A	Intranets that allow sales reps to access customer records		0	4
Q	Cloud computing can be best explained by _____		M	1
A	LAN operations		0	1
A	Intranet		0	2
A	Web application		0	3
A	Hadoop		1	4
Q	Pervasive computing systems are _____		M	1

A	Context aware		1	1
A	Content aware		0	2
A	Network specific		0	3
A	Range specific		0	4
Q	____		M	1
A	Cost of data centres is higher		1	1
A	Cost of data centres is less		0	2
A	Cost of cloud is higher		0	3
A	Cost of cloud is less		0	4
Q	Sourcing, Ownership, reliability are the _____provided by the cloud		M	1
A	Community		0	1
A	Applications		0	2
A	Services		1	3
A	Features		0	4
Q	systems, such as computer-assisted design (CAD), computer assisted		M	1
A	Sales force automation		0	1
A	Computer-integrated manufacturing		1	2
A	Product Lifecycle Management		0	3
A	Management of interdependent items		0	4
Q	Systems which typically provide information to managers in the functional areas include_____		M	1
A	ERP systems		0	1
A	Business Intelligence System		0	2
A	Transaction Processing System		1	3
A	HR Information Systems		0	4
Q	An adhoc report which includes only information that falls outside certain threshold standards includes ____		M	1
A	Comparative reports		0	1
A	Drill-down reports		0	2
A	Exception reports		1	3
A	Routine reports		0	4

Q	The three main business processes supported by ERP systems comprises of_____		M	1
A	Transaction and planning processes		0	1
A	Procurement, fulfillment, production processes		1	2
A	Analysis, Administrative and Adhoc Processes		0	3
A	Production planning and Administrative processes		0	4
Q	A business strategy that enables manufacturers to share product-related data that support product design and development and supply chain operations is_____			1
A	Planning Production and Operations		0	1
A	Quality Control		0	2
A	Product Lifecycle Management.		1	3
A	Control and Auditing		0	4
Q	The two different strategies that the production process can follow:			1
A	Make-to-store and Make-to-sell		0	1
A	Make-to-process and Make-to-store		0	2
A	Best order, Least order		0	3
A	Make-to-stock and Make-to-order		1	4
Q	Which out of the subsquent is NOT an example of data?		M	1
A	301062		0	1
A	Blue		0	2
A	32, Primrose Hill		1	3
A	Mumbai		0	4
Q	Definition of Sample in MIS is			1
A	A tool used to collect statistical data		0	1
A	Statistics collected from an entire population		0	2
A	The factual information collected from a survey or other source is		0	3
A	A group chosen from a population		1	4
Q	Cost leadership strategy of the competitive advantage is to			1
A	Produce products and/or services at the lowest cost in the industry.		1	1
A	competitors.		0	2
A	products		0	3

A	processes		0	4
Q	to management reports			1
A	Interface		0	1
A	Dashboard		1	2
A	Whiteboard		0	3
A	Openboard		0	4
Q	decisions fall?		M	1
A	Operational control		0	1
A	Management control		0	2
A	Inventory control		1	3
A	Strategic planning		0	4
Q	individual attributes.			1
A	First		1	1
A	Second		0	2
A	Third		0	3
A	Fourth		0	4
Q	text, graphics, and tables is known as:			1
A	Image Processing		0	1
A	Data Visualization		1	2
A	Human Machine Interaction		0	3
A	Data Segmentation		0	4
Q	something is called a_____			1
A	Hacker		1	1
A	Cracker		0	2
A	Jammer		0	3
A	Spammer		0	4
Q	program is_____		M	1
A	Worm		0	1
A	Virus		1	2
A	Sniffer		0	3
A	Spoofing		0	4
Q	technology is called_____			1
A	Snooping		0	1

A	Electronic Surveillance		1	2
A	Investigation		0	3
A	Data collection		0	4
Q	intended for general public reading is called_____			1
A	Weblog		1	1
A	Electronic bulletin boards		0	2
A	Newsgroups		0	3
A	Electronic discussions		0	4

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: **Rev2016**

Examination: Final Year Semester VII

Course Code: **ECC703** and Course Name: **Optical Communication**

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	What is the principle of fiber optical communication?
Option A:	Frequency modulation
Option B:	Population inversion
Option C:	Total internal reflection
Option D:	Doppler Effect
Q2.	The phase and group velocity does not depend on which of the following?
Option A:	Frequency
Option B:	Wavelength
Option C:	Phase constant
Option D:	Attenuation constant
Q3.	Calculate the numerical aperture of an optical fiber whose core and cladding are made of materials of refractive index 1.48 and 1.46 respectively.
Option A:	0.5567
Option B:	0.2424
Option C:	0.2626
Option D:	0.6478
Q4.	The core of an optical fiber has a
Option A:	Lower refracted index than air
Option B:	Lower refractive index than the cladding
Option C:	Higher refractive index than the cladding
Option D:	Similar refractive index with the cladding
Q5.	……..is the different angle of entry of light into an optical fiber when the diameter of the core is many times the wavelength of the light transmitted.
Option A:	Acceptance angle
Option B:	Modes
Option C:	Sensors
Option D:	Aperture
Q6.	Material is used for making of optical fiber is…….
Option A:	Bismuth
Option B:	Indium
Option C:	Glass
Option D:	Brass
Q7.	Multimode graded index optical fiber are made from
Option A:	Glass with Lower Purity

Option B:	Glass with No impurity
Option C:	Glass Same as single mode fiber
Option D:	Glass with Higher purity
Q8.	The refractive index of the cladding is ------ in the case of graded index fiber.
Option A:	non uniform
Option B:	constant
Option C:	non homogeneous
Option D:	time varying
Q9.	The main disadvantage of the graded index fiber is
Option A:	it possess low light coupling efficiency
Option B:	the distortion is very high
Option C:	small amount of information can be transmitted
Option D:	it is more fragile than step index fiber
Q10.	Rayleigh scattering is the phenomena of scattering of light particles majorly by the
Option A:	Fault in manufacturing the fiber
Option B:	Splicing of fiber
Option C:	Impurities present in cladding
Option D:	Molecules of gas & sometimes also by solid and liquid
Q11.	Environmental effects the optical fiber to posses
Option A:	Micobending
Option B:	Rough edges of the fiber
Option C:	Large diameter of core
Option D:	Polarization
Q12.	OTDR meter works on which principle_____
Option A:	Attenuation
Option B:	Conduction
Option C:	Reflection
Option D:	Diffraction
Q13.	What is the full form of VCSEL?
Option A:	vertical cavity surface emitting lasers
Option B:	surface emitting lasers
Option C:	Edge emitting lasers
Option D:	Horizontal cavity surface emitting light
Q14.	The laser operates on the basis of stimulated emission whereas LED operates on the basis of
Option A:	Spontaneous emission
Option B:	Absorption
Option C:	Stimulated emission
Option D:	Refraction

Q15.	The semiconductor materials used for optical sources must broadly fulfill several criteria of …….
Option A:	p–n junction formation, efficient electroluminescence and useful emission wavelength
Option B:	p-n junction formation, inefficient electroluminescence and useful emission wavelength
Option C:	Not at all p-n junction formation, inefficient electroluminescence and useful emission wavelength
Option D:	p-n junction formation, efficient electroluminescence and non-useful emission wavelength
Q16.	The width of depletion region of semiconductor is dependent on?
Option A:	Doping concentrations for applied reverse bias
Option B:	Doping concentrations for applied forward bias
Option C:	Properties of material
Option D:	Amount of current provided
Q17.	Electron-hole pairs are generated in?
Option A:	Diffusion region
Option B:	Depletion region
Option C:	N-type region
Option D:	P-type region
Q18.	If incident photons on photodiodes is 5*10^11 and electrons collected at terminals is 1.7*10^11.Determine quantum efficiency
Option A:	34%
Option B:	35%
Option C:	36%
Option D:	37%
Q19.	A permanent joint formed between two different optical fibers in the field is known as a
Option A:	Fiber attenuator
Option B:	Fiber connector
Option C:	Fiber splice
Option D:	Fiber dispersion
Q20.	_____ couplers combine the different wavelength optical signal onto the fiber or separate the different wavelength optical signal output from the fiber.
Option A:	3-port
Option B:	2*2-star
Option C:	WDM
Option D:	Directional
Q21.	The rounding of the fiber ends with a low energy discharge before pressing the fibers together and fusing with a stronger arc is called as
Option A:	Pre-fusion
Option B:	Diffusion

Option C:	Crystallization
Option D:	Alignment
Q22.	The optical power coupled from one fiber to another is limited by _____
Option A:	Numerical apertures of fibers
Option B:	Varying refractive index of fibers
Option C:	Angular power distribution at source
Option D:	Number of modes propagating in each fiber
Q23.	The term power budgeting in optical fiber communication refers to
Option A:	the cost of cables, connectors, equipment, and installation
Option B:	the loss of power due to defective components
Option C:	the total power available minus the attenuation losses
Option D:	the comparative costs of fiber and copper installations
Q24.	The band of light wavelengths that are too long to be seen by the human eye
Option A:	Infrared
Option B:	Amber
Option C:	Visible
Option D:	Ultraviolet
Q25.	Which amongst the following are most important parameters in case of installation of Optical Fibers in working environment?
Option A:	Transmission property of the fiber
Option B:	Mechanical property of the fiber
Option C:	Core cladding ratio of the fiber
Option D:	Numerical aperture of the fiber

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication
Curriculum Scheme: Rev2016
Examination: Final Year Semester VII
Course Code: ECC701 and Course Name: Microwave Engineering
Time: 1 hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	EM wave consists of _____
Option A:	Both E and H field perpendicular to each other
Option B:	E field only
Option C:	H Field only
Option D:	Both E and H field parallel to each other
Q2.	In order to obtain the resonant frequency of a rectangular waveguide, the closed cavity has to satisfy:
Option A:	Gaussian equation
Option B:	Helmholtz equation
Option C:	Ampere's law
Option D:	Faraday's law
Q3.	____ is the main advantage of microwave
Option A:	highly directive
Option B:	high penetration power
Option C:	moves at the speed of light
Option D:	cost effective
Q4.	If the characteristic impedance of a $\lambda/2$ transmission line is 50 Ω and reflection coefficient 0.3, then its input impedance
Option A:	26.92 Ω
Option B:	30 Ω
Option C:	40 Ω
Option D:	34.87 Ω
Q5.	The lowest mode of TM wave propagation is:
Option A:	TM10 mode
Option B:	TM01 mode
Option C:	TM11 mode
Option D:	TM12 mode
Q6.	In a rectangular waveguide has dimension of 2.5 x 5 cms, calculate cut off wavelength for its dominant mode.
Option A:	12 cm
Option B:	10.5 cm
Option C:	10 cm
Option D:	5 cm
Q7.	A ferrite is _____

Option A:	an intermetallic compound with particularly good conductivity
Option B:	a microwave semiconductor invented by Faraday
Option C:	an insulator which heavily attenuates magnetic fields
Option D:	a nonconductive with magnetic properties
Q8.	For TM01 mode of propagation in a circular waveguide with P01=2.405, with the inner diameter of the circular waveguide being equal to 25 mm. What is the cut off frequency for this mode of propagation?
Option A:	2.8 GHz
Option B:	6 GHz
Option C:	3.06 GHz
Option D:	4 GHz.
Q9.	In E-plane Tee junction if port 3 is at E-arm then which two ports get output with 180degree phase shift from each other?
Option A:	port 3 and 4
Option B:	port 1 and 2
Option C:	port 4 and 1
Option D:	port 4 and 2
Q10.	For any mode of propagation in a rectangular waveguide, propagation occurs:
Option A:	Only at the cut-off frequency
Option B:	Depends on the dimension of the waveguide
Option C:	Above the cut off frequency
Option D:	Below the cut off frequency
Q11.	TE_{oo} mode for a rectangular waveguide:
Option A:	Exists
Option B:	Exists but defined only under special cases
Option C:	Does not exist
Option D:	Cannot be determined
Q12.	The two cavity klystron tube is a _____ amplifier
Option A:	Crossed field
Option B:	Linear beam
Option C:	Parallel field
Option D:	Magnetic Field
Q13.	In Magnetron the output frequency is determined by ---
Option A:	Acceleration of electron beam
Option B:	Amount of dc voltage applied
Option C:	Dimensions of resonant cavities
Option D:	Length of cathode
Q14.	A microwave tube amplifier uses an axial magnetic field and a radial electric field. This is the
Option A:	Traveling-wave magnetron
Option B:	Reflex klystron

Option C:	Coaxial magnetron
Option D:	Crossfield Amplifier
Q15.	The purpose of magnet which surrounds Travelling Wave Tube is-------
Option A:	Accelerate the electron beam
Option B:	Hold electron beam from spreading out
Option C:	Modulate the velocity of electron beam
Option D:	Slowdown the electromagnetic wave on the helix
Q16.	The cavity magnetron uses strapping to --------.
Option A:	prevent mode jumping
Option B:	prevent cathode back-heating
Option C:	ensure bunching
Option D:	improve the phase-focusing effect
Q17.	Which one of the following is a transferred electron device?
Option A:	BARITT diode
Option B:	Gunn diode
Option C:	IMPATT diode
Option D:	Step recovery diode
Q18.	HEMT used in the microwave circuit is a
Option A:	Source
Option B:	High power amplifier
Option C:	Low noise amplifier
Option D:	Detector
Q19.	The doping profile required to support “tunneling” phenomenon is
Option A:	Lightly doped p and n sides of the diode
Option B:	Highly doped p and lightly doped n sides of the diode
Option C:	Lightly doped p and highly doped n sides of the diode
Option D:	The doping profile required to support “tunneling” phenomenon is
Q20.	Highly doped p and n sides of the diode
Option A:	IMPATT diode has
Option B:	Impact ionization
Option C:	Dynamic DC negative resistance
Option D:	Both (a) and (b)
Q21.	The frequency of operation of an FET is limited by
Option A:	Gate length
Option B:	Effective area of an FET
Option C:	Voltage between drain and source
Option D:	Voltage between gate and source
Q22.	Consider the following statements; SWR of a transmission line is infinite when the load is 1. a short circuit ,2. a

	complex impedance 3. an open circuit 4. a pure reactance Which of the above statements are correct?
Option A:	1 and 3 only
Option B:	1, 2, 3
Option C:	2, 3, 4
Option D:	1,2,4,
Q23.	Which of the following is used in integrated circuits?
Option A:	Two wire line
Option B:	Coaxial Line
Option C:	Shield Cable
Option D:	Microstrip line
Q24.	In a microwave power measurement using bolometer, the principle of working is variation of
Option A:	Inductance with absorption of power
Option B:	Resistance with absorption of power
Option C:	Capacitance with absorption of power
Option D:	Cavity dimension with heat generated by power
Q25.	The manufacturing technique used to manufacture strip type transmission line is
Option A:	Cladding
Option B:	Epitaxial
Option C:	Photoetching technique
Option D:	Oxidation technique

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Fourth Year SemesterVII
Course Code: ECC702and Course Name: Mobile Communication System
Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Given i= 2, j= 1. Determine the cluster size?
Option A:	8
Option B:	7
Option C:	10
Option D:	9
Q2.	RSSI stands for
Option A:	Radio Signal Strength Interface
Option B:	Radio Signal Strength Information
Option C:	Radio Signal Strength Indications
Option D:	Radio Signal Strength Index
Q3.	For hexagonal cell geometry Co-channel reuse ratio is given by
Option A:	Square root of (3*N)
Option B:	3*N
Option C:	1/N
Option D:	M*k*N
Q4.	Hand-off threshold depends on type of service (eg. Voice, Video, Data etc.)?
Option A:	Irrelevant Situation
Option B:	Yes
Option C:	Depends on situation
Option D:	No
Q5.	Attenuation in Large scale fading refers the
Option A:	Signal power
Option B:	Phase
Option C:	Amplitude
Option D:	Frequency
Q6.	Why Small scale fading occurs
Option A:	Due to Time delay
Option B:	Due to Doppler shift and time delay
Option C:	Due to frequency delay
Option D:	Due to power delay
Q7.	In TDMA multiple access technique, we have
Option A:	half duplex technique
Option B:	same user in same time slot
Option C:	simplex

Option D:	different users in different time slots
Q8.	Which Criterion is used to check surface roughness?
Option A:	Rayleigh criterion
Option B:	Newton criterion
Option C:	Nyquist criterion
Option D:	Faradays criterion
Q9.	The following feature makes impossible to eavesdrop on GSM radio transmission
Option A:	SIM
Option B:	SMS
Option C:	Packet switched traffic
Option D:	On the air privacy
Q10.	Which cellular system provides universal personal communications
Option A:	first generation
Option B:	second generation
Option C:	third generation
Option D:	fourth generation
Q11.	Frequency planning is very essential in
Option A:	FDMA
Option B:	TDMA
Option C:	FDMA and TDMA
Option D:	FDMA and CDMA
Q12.	CDMA rejects
Option A:	Narrow band interference
Option B:	Wide band interference
Option C:	Narrow and Wide band interference
Option D:	Wide and Narrow band interference
Q13.	In third generation of cellular phones, WCDMA and TDMA use combination of
Option A:	IMT-SC
Option B:	IMT-TC
Option C:	IMT-DS
Option D:	IMT-MC
Q14.	CDMA uses
Option A:	hard hand off
Option B:	soft hand off
Option C:	medium hand off
Option D:	Hard and Soft hand off
Q15.	Which new modulation technique is used by EDGE?
Option A:	BPSK
Option B:	8- PSK
Option C:	DQPSK

Option D:	AFSK
Q16.	Which of the following is not an application of third generation network?
Option A:	Global Positioning System (GPS)
Option B:	Downloading rate up to 1 Gbps
Option C:	Mobile TV
Option D:	Video conferencing
Q17.	What is one disadvantage of EDGE in comparison to GPRS?
Option A:	Low data rates
Option B:	Small coverage range
Option C:	Low speed
Option D:	No advancement
Q18.	3GPP based on _____
Option A:	2G
Option B:	W-CDMA
Option C:	cdma 2000
Option D:	2.5G
Q19.	Amount of bandwidth requirement in LTE system, to transmit the primary and secondary synchronization signals is _____MHz
Option A:	10
Option B:	5
Option C:	1.4
Option D:	1.08
Q20.	Minimum amount of RF spectrum needed for an FDD LTE radio channel is _____MHz
Option A:	1.2
Option B:	5
Option C:	2.8
Option D:	10
Q21.	In LTE system, PAPR reduction in the uplink leads to
Option A:	improved uplink coverage
Option B:	lower UE power consumption
Option C:	reduced equalizer complexity
Option D:	all the above
Q22.	MIMO was initially developed in the year _____
Option A:	1980
Option B:	1990
Option C:	1970
Option D:	1975
Q23.	Which of the following process can be done by Cognitive Radio?
Option A:	Spectrum Mobility
Option B:	Spectrum Management

Option C:	Spectrum Sharing
Option D:	Spectrum allocation
Q24.	In MIMO, which factor has the greatest influence on data rates?
Option A:	The size of antenna
Option B:	The height of the antenna
Option C:	The number of transmit antennas
Option D:	The area of receive antennas
Q25.	Which of the following technology does not use MIMO?
Option A:	4G
Option B:	WiFi
Option C:	WiMAX
Option D:	AMPS

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics & Telecommunication
Curriculum Scheme: Rev2016
Examination: Fourth Year Semester VII
Course Code: ECCDLO7033and Course Name: Internet communication Engineering
Time: 1-hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	_____layer in the TCP / IP stack is equivalent to the transport layer of the OSI model?
Option A:	Application
Option B:	Host-to-host
Option C:	Internet
Option D:	Network access
Q2.	If you use either Telnet or FTP which is the highest layer you are using to transmit data?
Option A:	Application
Option B:	Presentation
Option C:	Session
Option D:	Transport
Q3.	In a/an …… of DNS resolver, the queried name server can return the best answer it currently has back to the DNS resolver.
Option A:	Recursive queries
Option B:	Iterative queries
Option C:	Reverse queries
Option D:	Inverse queries
Q4.	In MIME header field, ... describes how the object within the body was encoded in order that it be included in the message using a mail-safe form.
Option A:	content-type
Option B:	content-transfer-encoding

Option C:	content-description
Option D:	content -id
Q5.	Which of the following is false with respect to TCP?
Option A:	Connection-oriented
Option B:	Process-to-process
Option C:	Transport layer protocol
Option D:	Unreliable
Q6.	Which of the following is not the layer of TCP/IP PROTOCOL.
Option A:	Physical layer
Option B:	link layer
Option C:	network layer
Option D:	transport layer
Q7.	Which of the following functions does UDP perform?
Option A:	Process-to-process communication
Option B:	Host-to-host communication
Option C:	End-to-end reliable data delivery
Option D:	Interface-to-interface communication.
Q8.	Beyond IP, UDP provides additional services such as _____
Option A:	Routing and switching
Option B:	Sending and receiving of packets
Option C:	Multiplexing and demultiplexing
Option D:	Demultiplexing and error checking

Q9.	A layer-4 firewall (a device that can look at all protocol headers up to the transport layer) CANNOT
Option A:	block entire HTTP traffic during 9:00PM and 5 :0OAM
Option B:	block all ICMP traffic
Option C:	stop incoming traffic from a specific IP address but allow outgoing traffic to the same IP address
Option D:	block TCP traffic from a specific user on a multi-user system during 9:00PM and 5:00AM
Q10.	What is the default mask for class A in CIDR notation?
Option A:	/5
Option B:	/8
Option C:	/16
Option D:	/24
Q11.	Header size of the ICMP message is _____
Option A:	8 bytes
Option B:	8 bits
Option C:	16 bytes
Option D:	124 bytes
Q12.	The source-quench message in ICMP was designed to add a kind of _____ to the IP.
Option A:	error control
Option B:	flow control
Option C:	router control
Option D:	switch control
Q13.	An IPv4 datagram is fragmented into three smaller datagrams. Which of the following is true?

Option A:	The do not fragment bit is set to 1 for all three datagrams.
Option B:	The more fragment bit is set to 0 for all three datagrams.
Option C:	The identification field is the same for all three datagrams.
Option D:	The offset field is the same for all three datagrams.
Q14.	The TTL field has value 10. How many routers (max) can process this datagram?
Option A:	11
Option B:	10
Option C:	5
Option D:	6
Q15.	ICMP is primarily used for _____
Option A:	error and diagnostic functions
Option B:	addressing
Option C:	forwarding
Option D:	routing
Q16.	Which one of the following is not a function of network layer?
Option A:	routing
Option B:	internetworking
Option C:	congestion control
Option D:	flow control
Q17.	IKE is a complex protocol based on _____ other protocols.
Option A:	Two
Option B:	Three
Option C:	Four

Option D:	Five
Q18.	Pretty good privacy (PGP) is used in _____
Option A:	browser security
Option B:	email security
Option C:	FTP security
Option D:	WIFI security
Q19.	Video is represented as a series of images formally known as _____
Option A:	pics
Option B:	shots
Option C:	frames
Option D:	snaps
Q20.	Moving Picture Experts Group (MPEG) is used to compress
Option A:	Frames
Option B:	Images
Option C:	Audio
Option D:	Video
Q21.	In Audio and Video Compression, each frame is divided into small grids, called picture elements or
Option A:	Frame.
Option B:	Packet
Option C:	Pixel
Option D:	Mega pixel

Q22.	A combination of an encryption algorithm and a decryption algorithm is called a
Option A:	plain Text
Option B:	Cipher text
Option C:	Original text
Option D:	shift text
Q23.	RTP provides the facility of jitter _____
Option A:	media stream
Option B:	Expansion
Option C:	media modification
Option D:	security
Q24.	In integrated Services, when a source makes a reservation it needs to define a
Option A:	Flow control
Option B:	Timer
Option C:	Error Solution
Option D:	Flow specification
Q25.	In differentiated Service, each packet contain a field contain___
Option A:	DS Field
Option B:	DA Field
Option C:	DC Field
Option D:	DE Field

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Third Year Semester VII
Course Code: ECCDLO 7034 and Course Name:CMOS Mixed Signal VLSI
Time: 1 hour Max. Marks: 50

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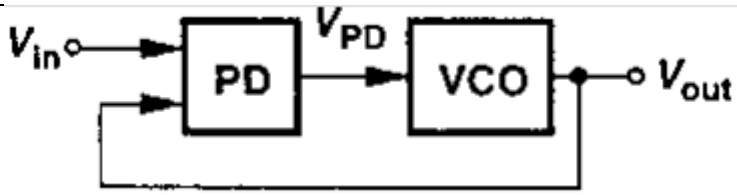
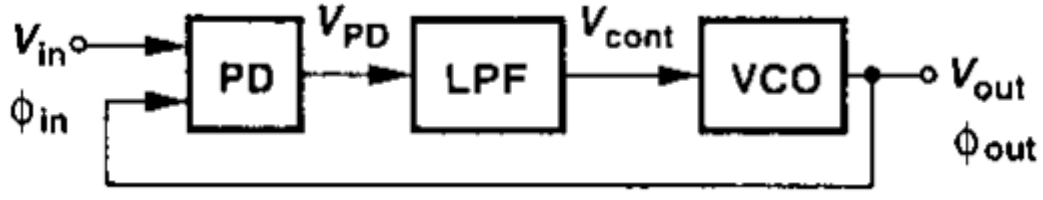
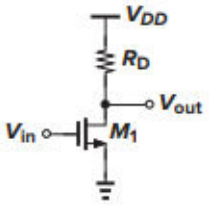
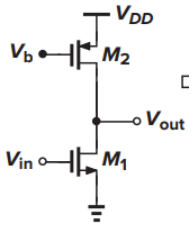
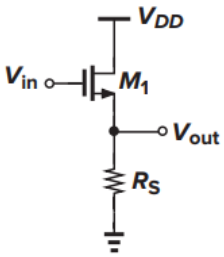
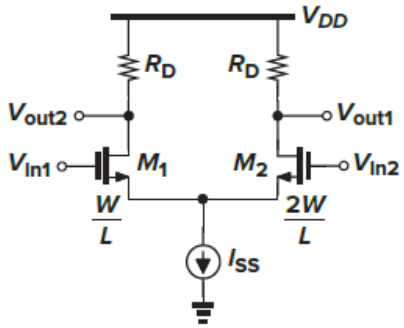
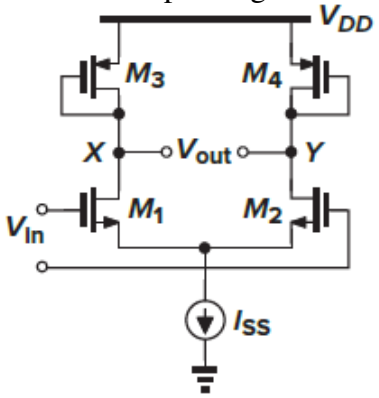
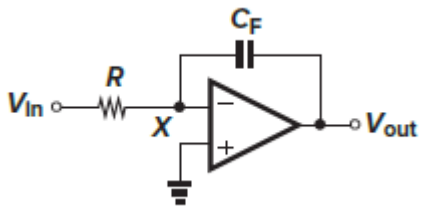
Note to the students:- All the Questions are compulsory and carry equal marks .

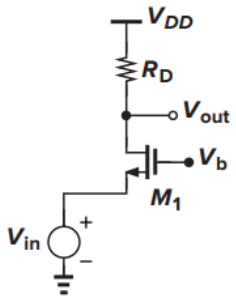
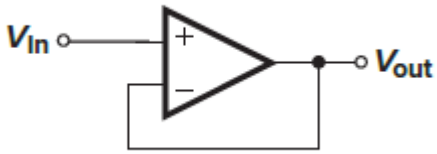
Q1.	The PLL device is:
Option A:	Feedback system that compares output frequency and input frequency
Option B:	Feedback system that compares output phase and input phase
Option C:	Linear system that compares output resistance and input resistance
Option D:	Non-Linear system that compares output current and input current
Q2.	The Logic gate that works similar to phase detector is:
Option A:	AND
Option B:	OR
Option C:	XOR
Option D:	NOT
Q3.	The block diagram of basic PLL consists of:
Option A:	
Option B:	
Option C:	
Option D:	None of the above
Q4.	Which current source exhibits a very high output resistance?
Option A:	Simple current mirror
Option B:	Wilson current mirror
Option C:	Widlar current mirror
Option D:	Three transistor

Q5.	The transfer function of PD is :
Option A:	Constant
Option B:	Varies with frequency
Option C:	Varies with voltage
Option D:	none
Q6.	What is the input at the phase detector? 
Option A:	V1(t) – V2(t)
Option B:	Phase(V1) + Phase(V2)
Option C:	Phase(V1) - Phase(V2)
Option D:	V1(t) + V2(t)
Q7.	Which A/D converter is considered to be simplest, fastest and most expensive?
Option A:	Servo converter
Option B:	Counter type ADC
Option C:	Flash type ADC
Option D:	All of the mentioned
Q8.	Which is not the internal circuit of operational amplifier?
Option A:	Differential amplifier
Option B:	Level translator
Option C:	Output driver
Option D:	clamper
Q9.	The gain of the following circuit is 
Option A:	$= -g_m R_D$
Option B:	$= -\frac{g_{m1}}{g_{m2}} \frac{1}{1+\eta}$

Option C:	$= -\frac{g_{m1}}{g_{m2}}$
Option D:	$= -g_{m1}(r_{O1} \| r_{O2})$
Q10.	The gain of the following circuit is 
Option A:	$= -g_m R_D$
Option B:	$= -\frac{g_{m1}}{g_{m2}} \frac{1}{1+\eta}$
Option C:	$= -\frac{g_{m1}}{g_{m2}}$
Option D:	$= -g_{m1}(r_{O1} \| r_{O2})$
Q11.	Which of the following represents over sampling DAC?
Option A:	PWM DAC
Option B:	Delta-sigma DAC
Option C:	Binary weighted DAC
Option D:	Switched resistor DAC
Q12.	The given circuit is of 
Option A:	Source Follower
Option B:	Common Source with diode connected load
Option C:	Common Source with Resistive Load
Option D:	Common Gate
Q13.	Which of the following is a binary weighted DAC?
Option A:	R-2R ladder DAC

Option B:	PWM DAC
Option C:	Switched resistor DAC
Option D:	Sampling DAC
Q14.	what is the gain of the given circuit 
Option A:	4gm1Rd/3
Option B:	8gm1Rd/3
Option C:	2gm1Rd/3
Option D:	4gm1Rd/8
Q15.	What is the use of the compensation capacitor in op-amp?
Option A:	Improves the amplification of op-amp
Option B:	Decreases the slew rate of op-amp
Option C:	Increases the bandwidth of op-amp
Option D:	Op-amp acts as all pass filter
Q16.	Differential Amplifier gain with MOS load 
Option A:	$= -g_{mN}(r_{ON} \| r_{OP})$
Option B:	$-\frac{g_{mN}}{g_{mP}}$
Option C:	$= -g_m R_D$
Option D:	$= -\frac{g_{m1}}{g_{m2}} \frac{1}{1+\eta}$
Q17.	Which of the following type output is provided by ADC?

Option A:	Serial type
Option B:	Parallel type
Option C:	Both serial and parallel type
Option D:	None of the mentioned
Q18.	Dynamic range of ADC is depended on _____
Option A:	Resolution
Option B:	Linearity
Option C:	Accuracy
Option D:	All of the mentioned
Q19.	ENOB in ADC stand for _____
Option A:	Effective number of bytes
Option B:	Effective number of bits
Option C:	Effective nibble baud
Option D:	None of the mentioned
Q20.	Find output voltage equation for 3 bit DAC converter with R and 2R resistor?
Option A:	$V_o = -R_F [(b_2/8R) + (b_1/4R) + (b_0/2R)]$.
Option B:	$V_o = -R_F [(b_2/R) + (b_1/2R) + (b_0/4R)]$.
Option C:	$V_o = -R_F [(b_2/2R) + (b_1/4R) + (b_0/8R)]$.
Option D:	$V_o = -R_F [(b_0/4R) + (b_1/2R) + (b_2/R)]$.
Q21.	In an ideal op-amp, which is not true?
Option A:	Open loop voltage gain is infinite
Option B:	Input resistance is infinite
Option C:	Slew rate is infinite
Option D:	CMRR is zero
Q22.	The given circuit is of 
Option A:	Unity gain Buffer
Option B:	Integrator
Option C:	Differentiator
Option D:	Switch amplifier
Q23.	Given circuit is of

	
Option A:	Source Follower
Option B:	Common Source with diode connected load
Option C:	Common Source with Resistive Load
Option D:	Common Gate
Q24.	The given circuit is of 
Option A:	Unity gain Buffer
Option B:	Integrator
Option C:	Differentiator
Option D:	Switch amplifier
Q25.	Switch Capacitor network can also act as a
Option A:	Bus
Option B:	Memory
Option C:	Resistor
Option D:	Inductor

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Final Year Semester VII
Course Code: ECCDLO7031 and Course Name: Neural Network & Fuzzy Logic
Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	What are dendrites?
Option A:	Nuclear projections
Option B:	Fibres of nerve
Option C:	other name for nucleus
Option D:	Soma
Q2.	What is the formula for bias update
Option A:	b(new)=b(old)+0
Option B:	b(new)=b(old)+xy
Option C:	b(new)=b(old)+y
Option D:	b(new)=b(old)+x
Q3.	What is estimate number of neurons in human cortex?
Option A:	10 to the power 8
Option B:	10 to the power 5
Option C:	10 to the power 11
Option D:	10 to the power 20
Q4.	Why is the XOR problem exceptionally interesting to neural network researchers
Option A:	Because it can be expressed in a way that allows you to use a neural network
Option B:	Because it is complex binary operation that cannot be solved using neural networks
Option C:	Because it can be solved by a single layer perceptron
Option D:	Because it is the simplest linearly inseparable problem that exists.
Q5.	Which activation function used in perceptron Learning rule
Option A:	Binary
Option B:	Continuous
Option C:	both
Option D:	independent of both
Q6.	Who proposed the first perceptron model in 1958?
Option A:	McCulloch-pitts
Option B:	Marvin Minsky
Option C:	Hopfield
Option D:	Rosenblatt
Q7.	The network that involves backward links from output to the input and hidden layers is called _____
Option A:	Self organizing map

Option B:	Perceptrons
Option C:	Recurrent neural network
Option D:	Multi layered perceptron
Q8.	What is the name of the function in the following statement "A perceptron adds up all the weighted inputs it receives, and if it exceeds a certain value, it outputs a 1, otherwise it just outputs a 0"?
Option A:	Step function
Option B:	Heaviside function
Option C:	Logistic function
Option D:	Perceptron function
Q9.	What is the starting weight value in Self organization map
Option A:	One
Option B:	Two
Option C:	Null
Option D:	Random
Q10.	How are input layer units connected to second layer in competitive learning networks?
Option A:	feedforward manner
Option B:	feedback manner
Option C:	feedforward and feedback
Option D:	feedforward or feedback
Q11.	Which of the following function is used for k-means clustering?
Option A:	k-means
Option B:	k-mean
Option C:	heatmap
Option D:	medoids
Q12.	How can states of units be updated in hopfield model?
Option A:	synchronously
Option B:	asynchronously
Option C:	synchronously and asynchronously
Option D:	Activation
Q13.	The SVM's are less effective when
Option A:	The data is linearly separable
Option B:	The data is clean and ready to use
Option C:	The data is uncleared
Option D:	The data is noisy and contains overlapping points
Q14.	Automated vehicle is an example of which type of learning
Option A:	Supervised learning
Option B:	Unsupervised learning
Option C:	Active learning
Option D:	Reinforcement learning

Q15.	The recalled output in pattern association problem depends on?
Option A:	nature of input-output
Option B:	design of network
Option C:	both input & design
Option D:	only input
Q16.	Which process is not involve in character recognition
Option A:	Smoothing
Option B:	Normalization
Option C:	Feature extraction
Option D:	Genralization
Q17.	A fuzzy set whose membership function has at least one element x in the universe whose membership value is unity is called
Option A:	normal fuzzy set
Option B:	sub normal fuzzy sets
Option C:	convex fuzzy set
Option D:	concave fuzzy set
Q18.	Fuzzy Logic is ____
Option A:	Multi Valued Logic
Option B:	Binary Logic
Option C:	Crisp set Logic
Option D:	Two level logic
Q19.	Which of the following is not a part of fuzzy logic Systems Architecture?
Option A:	Defuzzification Module
Option B:	Fuzzification Module
Option C:	Knowledge Base
Option D:	Interference base
Q20.	Bounded sum of two fuzzy sets A and B is given by
Option A:	$\max(0,\mu A(x)+\mu B(x))$
Option B:	$\min(1,\mu A(x)+\mu B(x))$
Option C:	$\min(0,\mu A(x)+\mu B(x))$
Option D:	$\max(1,\mu A(x)+\mu B(x))$
Q21.	Algebric sum of two fuzzy sets A and B is given by
Option A:	$\mu A(x)+\mu B(x)+\mu A(x).\mu B(x)$
Option B:	$\mu A(x)-\mu B(x)+\mu A(x).\mu B(x)$
Option C:	$\mu A(x)-\mu B(x)-\mu A(x).\mu B(x)$
Option D:	$\mu A(x)+\mu B(x)-\mu A(x).\mu B(x)$
Q22.	A robot is a _____
Option A:	Machine that thinks like a human
Option B:	Type of virtual reality device that takes the place of humans in adventures
Option C:	Machine that replaces a human by performing complex mental processing tasks

Option D:	Computer-controlled machine that mimics the motor activities of living things
Q23.	Fuzzy logic is
Option A:	A new programming language used to program animation
Option B:	Used to respond to questions in a humanlike way
Option C:	The result of fuzzy thinking
Option D:	A term that indicates logical values greater than one
Q24.	Which of the following is not a part of fuzzy logic Systems Architecture
Option A:	Fuzzification Module
Option B:	Knowledge Base
Option C:	Interference base
Option D:	Defuzzification Module
Q25.	What are the following sequence of steps taken in designing a fuzzy logic machine ?
Option A:	Fuzzification → Rule evaluation → Defuzzification
Option B:	Fuzzification → Defuzzification → Rule evaluation
Option C:	Rule evaluation → Fuzzification → Defuzzification
Option D:	Rule evaluation → Defuzzification → Fuzzification

University of Mumbai

Examination 2020 under cluster

Program: BE _____ Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: ILO 7017 and Course Name: Disaster Management and Mitigation Measures

Time: 1 hour Max. Marks: 50

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Note to the students:-All the Questions are compulsory and carry equal marks .

Q1.	_____ can be explained as, tragic set of events which consequently cause damage to property and life?
Option A:	Hazards
Option B:	Vulnerability
Option C:	Disaster
Option D:	Risk
Q2.	Which natural disaster is a sudden and violent shaking of the ground, sometimes causing great destruction, as a result of movements within the earth's crust or volcanic action?
Option A:	Earthquake
Option B:	Tsunami
Option C:	Thunderstorm
Option D:	Flooding
Q3.	Which of the following is not a component of disaster management cycle?
Option A:	Preparedness
Option B:	Response
Option C:	Construction
Option D:	Recovery
Q4.	What is EMS?
Option A:	Emergency medical services
Option B:	Effective mitigation system
Option C:	Emergency management system
Option D:	Effective management system
Q5.	N.D.R.F Stands for
Option A:	National Disaster Response Fund
Option B:	Natural Disaster Relief Fund
Option C:	National Dedicated Relief Fund
Option D:	National Dynamic Response Fund
Q6.	Risk can be dealt with following ways except:

Option A:	Risk acceptance
Option B:	Risk avoidance
Option C:	Risk reporting
Option D:	Risk reduction
Q7.	Which of the following is not a man-made hazard?
Option A:	Leakage of Toxic waste
Option B:	War
Option C:	Drought
Option D:	Environmental Pollution
Q8.	Which of the following are not the causes of manmade disaster?
Option A:	Technological
Option B:	Transportation
Option C:	Landslides
Option D:	Production errors
Q9.	Who heads the crisis management Committee
Option A:	Prime Minister
Option B:	President
Option C:	Cabinet Secretory
Option D:	Ministry Of Environment
Q10.	EMS technology helps in aread which are prone to effective disaster management except:
Option A:	Trials of evacuation and general disaster plans
Option B:	Training volunteers
Option C:	Construction of shelter
Option D:	Prevention of next emergency
Q11.	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
Q12.	The risk mapping and control does not depend on:
Option A:	The efforts taken by an organization
Option B:	Money
Option C:	Vulnerability analysis
Option D:	The action plans
Q13.	Tsunami’s can occur only during
Option A:	Evening
Option B:	Afternoon
Option C:	Any time of the day or night
Option D:	Morning

Q14.	Under which ministry Disaster Management Authority comes
Option A:	Ministry Of Environment
Option B:	Ministry of Foreign Affaires
Option C:	Ministry of Pollution
Option D:	Ministry of Home Affairs
Q15.	Which of the following components is not the part of EMS?
Option A:	Communication
Option B:	Recovery
Option C:	Budget
Option D:	Materials requirement
Q16.	Which the first step adopted for the assessment of the requests made by the state government to CENTRAL Government.
Option A:	Central Govt directly sends funds to State Govt
Option B:	The central team is deputed to make the on the spot assessment
Option C:	Finance Ministry Guides Cental Govt to relese funds
Option D:	Union Home Secretary visits State Govt affected by Disaster
Q17.	What is CBDM?
Option A:	Customers biased disaster management
Option B:	Cluster based disaster management
Option C:	Community based disaster management
Option D:	Consumer based disaster management
Q18.	The Richter scale expresses an earthquakes
Option A:	Magnitude
Option B:	Location
Option C:	Duration
Option D:	Depth
Q19.	Who is not first responder
Option A:	Police
Option B:	SDRF
Option C:	Fire and Medical Services
Option D:	NDRF
Q20.	Which of the following component of EMS does not add a value to disaster management?
Option A:	Emergency medical services
Option B:	Hazardous Materials Management
Option C:	Prevention of disaster
Option D:	Response and Recovery
Q21.	Prompt and effective response minimizes loss of life and property.
Option A:	Prompt and effective response
Option B:	Resource Allocation

Option C:	Planning
Option D:	Financing
Q22.	Floods can be prevented by
Option A:	Afforestation
Option B:	Cutting the forest
Option C:	Tilling the land
Option D:	Removing the top soil
Q23.	Which amongst the following ensures accurate documentation of all aspects of disaster events for creating good historical records for future research and mitigation planning
Option A:	NDMA
Option B:	MoUD
Option C:	NDRF
Option D:	NIDM
Q24.	The point of the earth's surface directly above the point where an earthquake occurs is called
Option A:	Focus
Option B:	Epicenter
Option C:	Fracture
Option D:	Fault
Q25.	Which committee recommend financial assistance to various disaster acrros country
Option A:	National Executive Committee
Option B:	Finance Committee
Option C:	Central Committee
Option D:	Cabinet Committee

University of Mumbai

Examination 2020

Program: _____

Curriculum Scheme: Rev 2016

Examination: Semester VII

Course Code: ILO7012 and Course Name: Reliability Engineering

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	If A and B are two events such that P(a) =0.3, P(b) = 0.6, and P(A/~B) is _____
Option A:	0.3
Option B:	0.5
Option C:	0.8
Option D:	0.2
Q2.	Previous probabilities in Bayes Theorem that are changed with help of new available information are classified as _____
Option A:	Independent Probabilities
Option B:	Posterior probabilities
Option C:	Interior probabilities
Option D:	Dependent probabilities
Q3.	Let X be a random variable with probability distribution function f(x)=0.2 for |x|<1 =0.1 for 1<|x|<4 =0 otherwise The probability P(0.5 < x <5) is _____
Option A:	0.3
Option B:	0.5
Option C:	0.4
Option D:	0.8

Q4.	If 'm' is the mean of a Poisson Distribution, the standard deviation is given by _____.
Option A:	$\sqrt{m}$
Option B:	m^2
Option C:	m
Option D:	$\frac{m}{2}$
Q5.	What is the mean time to failure if time to failure of a gadget follows Weibull distribution with scale =1000 hours and shape = 0.5?
Option A:	2500 hours
Option B:	1500 hours
Option C:	3000 hours
Option D:	2000 hours
Q6.	The failure density function f(t) is defined as the derivative of the
Option A:	Failure probability
Option B:	Intensity
Option C:	Pass probability
Option D:	Density
Q7.	Mean time between failures can be defined as:
Option A:	$\frac{total\ number\ of\ failure}{total\ operation\ time}$
Option B:	$\frac{total\ operation\ time}{total\ number\ of\ failure}$

Option C:	$\frac{total\ operation\ time}{total\ number\ of\ components}$
Option D:	$\frac{total\ number\ of\ components}{total\ operation\ time}$
Q8.	A component with time to failure T has constant failure rate $z(t) = \lambda = 2.5 \times 10^{-5}[hours]^{-1}$ Determine the probability that the component survives a period of 2 months without failure.
Option A:	0.815
Option B:	0.965
Option C:	0.911
Option D:	0.864
Q9.	The system reliability of the parallel system
Option A:	Is greater than the reliability of any subsystem
Option B:	Is equal to the reliability of the best subsystem
Option C:	Decreases as more redundant subsystem are added to the system
Option D:	Increase if the subsystem with the lowest reliability is removed
Q10.	Consider a four component system of which the components are independent and identically distributed with Constant Failure Rate (CFR). If $R_2(100) = 0.95$, find the individual component Mean Time to Failure?
Option A:	0.128
Option B:	0.0128
Option C:	0.000128
Option D:	1

Q11.	What failure rate must each component of a series system have, so that the probability that the system operates beyond 1000 hours is 0.9917 (Assume that all three components are independent, operate simultaneously, and have identical constant failure rates.)
Option A:	0.00278 per hour
Option B:	2.78×10^{-6} per hour
Option C:	2.78×10^{-5} per hour
Option D:	0.0287 per hour
Q12.	The components each with a reliability of 0.9 are placed in series. What is the reliability of the system?
Option A:	0.729
Option B:	0.986
Option C:	0.458
Option D:	0.589
Q13.	If the probability of a car starting on a sub-zero morning is 0.5 and we have two such cars. What is the probability that at least one of the cars will start on a sub-zero morning?
Option A:	0.92
Option B:	0.75
Option C:	0.81
Option D:	0.60
Q14.	Calculate the system unavailability, if the failure rate of a system is 2 failures/year and the average repair time is 20 hours.
Option A:	14.97 hr/yr
Option B:	18.47 hr/yr
Option C:	39.81 hr/yr

Option D:	32.17 hr/yr
Q15.	Which of the following approach is not the redundancy approach?
Option A:	Unit redundancy
Option B:	Component redundancy
Option C:	Strong component should be identified and strengthened for reliability
Option D:	Mixed redundancy
Q16.	For the successful operation of the system, the reliability of the system will be much better due to _____
Option A:	Absence of redundant element and proper operation one element
Option B:	Presence of redundant element and improper operation one element
Option C:	Absence of redundant element and improper operation one element
Option D:	Presence of redundant element and proper operation one element
Q17.	In unit redundancy, for improving the reliability of the system, a similar system should be added to the existing system in _____
Option A:	Series
Option B:	Both series and parallel
Option C:	parallel
Option D:	No connection
Q18.	Redundant system consisting of two or more component connected in parallel and both components were operating simultaneously is called _____
Option A:	Standby redundancy
Option B:	Active redundancy
Option C:	Sitting redundancy
Option D:	Inactive redundancy

Q19.	In order to maintain maintainability in the system, repair time must _____
Option A:	Be increased
Option B:	Be reduced
Option C:	Be kept constant
Option D:	Keeps on changing
Q20.	While discussing the concept of parts interchangeability, "if new part does not meet the required functional substitution then,
Option A:	It should be fractionally interchangeability
Option B:	It should not be physically interchangeability
Option C:	It should be physically interchangeability
Option D:	It should not be fractionally interchangeability
Q21.	The inherent availability can be calculated for repairable system as:
Option A:	$A_I = \frac{MTBF}{MTTF + MTTR}$
Option B:	$A_I = \frac{MTTF}{MTTF + MTTR}$
Option C:	$A_I = \frac{MTTF}{MTBF+MTTR}$
Option D:	$A_I = \frac{MTTF}{MTTF + MTTR}$
Q22.	Risk priority number is
Option A:	Product of severity (S), Occurrence (O) & Detection (D)
Option B:	Sum of severity (S), Occurrence (O) & Detection (D)

Option C:	Maximum of Severity (S), Occurrence (O) & Detection (D)
Option D:	Minimum of Severity (S), Occurrence (O) & Detection (D)
Q23.	Failure mode and effect analysis (FMEA) provide a checklist procedure. Which of the following question is NOT likely to feature on the checklist?
Option A:	What would be the cost of avoiding failure be?
Option B:	How likely is such a failure to be detected before it affects the customer?
Option C:	What is the likelihood that failure will occur?
Option D:	What would the consequences of the failure be?
Q24.	Which of the following is not the advantage of Event Tree Analysis are:
Option A:	Structured, rigorous and methodical approach
Option B:	Can be effectively performed on varying levels of design detail
Option C:	Permits probability assessment
Option D:	Partial successes/failure are distinguishable
Q25.	What is the probability of an impossible event?
Option A:	0
Option B:	1
Option C:	Not defined
Option D:	Insufficient data

University of Mumbai
Online Examination 2020

Program: BE Engineering
Curriculum Scheme: R-2016
Examination: Final Year Semester VII
Course Code: ILOC 7015 Course Name: Operations Research
Time: 1 hour Max. Marks: 50

Question Paper Set No._01

Note: Each question is for 2 marks.

		Multiple Choice Questions (MCQ)
		ALL questions are compulsory. There are 25 questions, each question carries 2 mark.
1.	Queuing models measure the effect of:	
	a)	Random arrivals
	b)	Random service
	c)	Effect of uncertainty on the behaviour of the queuing system
	d)	Length of queue.
2.	If the number of arrivals during a given time period is independent of the number of arrivals that have already occurred prior to the beginning of time interval, then the new arrivals follow ----------distribution.	
	a)	Erlang
	b)	Poisson
	c)	Exponential
	d)	Normal
3.	An M/M/8 system is a system with --	
	a)	Generic M channel system, exponential arrivals, and Poisson service time.
	b)	Eight channel system, Poisson arrivals, and Exponential service time.
	c)	M channel system with Exponential arrivals and Poisson service times.
	d)	Eight channel system with Binomial arrival times and normally distributed service times
4.	As simulation is not analytical model, therefore result of simulation must be viewed as	
	a)	Unrealistic
	b)	Exact
	c)	approximation
	d)	simplified
5.	Monto-Carlo simulation	
	a)	Randomness is the key requirement
	b)	The model is of deterministic nature
	c)	The random numbers can be used to generate the value of input variables only, if the sampled distributed is uniform
	d)	None of these
6.	While assigning random numbers in Monte-Carlo simulation, it is	
	a)	Not necessary to assign the exact range of random number interval as the probability
	b)	Necessary to develop a cumulative probability distribution
	c)	Necessary to assign the particular appropriate random numbers
	d)	Not necessary to develop a cumulative probability distribution

7.	Which of the following is a property of a dynamic programming problem?	
	a)	Optimal substructure
	b)	Non-Overlapping sub problems
	c)	Local Optimal choice
	d)	The given problem can be reduced to the 3-SAT problem
8.	When a problem is solved using the top-down approach of dynamic programming, it usually …….	
	a)	Decreases both, the time complexity and the space complexity
	b)	Increases the time complexity and decreases the space complexity
	c)	Increases both, the time complexity and the space complexity
	d)	Increases the space complexity and decreases the time complexity
9.	Which of the following problems should be solved using dynamic programming?	
	a)	Long Integer Multiplication
	b)	Reliability problems
	c)	Spanning Tree
	d)	Matrix Multiplication
10.	When Minimax and Maximin criteria matches, then	
	a)	Fair game is exists
	b)	Unfair game is exists
	c)	Mixed strategy exists
	d)	Saddle point exists.
11.	The games with saddle points are:	
	a)	Probabilistic in nature
	b)	Normative in nature
	c)	Stochastic in nature
	d)	Deterministic in nature
12.	The size of the Payoff matrix of a game can be reduced by using the principle of	
	a)	Saddle point
	b)	Dominance
	c)	Game transpose
	d)	Game Inverse
13.	If orders are placed with size the EOQ, then the re-order costs component is	
	a)	Equal to the holding cost component
	b)	Greater than the holding cost component
	c)	Less than the holding cost component
	d)	Either greater or less than the holding cost component
14.	Which cost can vary with order quantity	
	a)	Unit cost only
	b)	Re-order cost
	c)	Holding cost only
	d)	All of these
15.	Annual demand for product costing Rs. 100 per piece is Rs. 900 Ordering cost per order is Rs. 100 and inventory holding cost is Rs.2 per unit per year. The economic lot size is	
	a)	200
	b)	300
	c)	400
	d)	500
16.	Consider the following 7 jobs J1, J2, J3, J4, J5, J6 and J7. They are processed on machines A and B in the order AB. The processing times on machine A for the 7 jobs are	

	[3, 12, 13, 4, 10, 11, 9] and the processing times on machine B for the 7 jobs are [8, 9, 8, 6, 13, 1, 3]. The optimum sequence of the jobs will have the first job going to machine A as -	
	a)	J1
	b)	J3
	c)	J7
	d)	J6
17.	Travelling Salesman Problem can be solved using: a-Simplex Method, b-Assignment Method, c-Dynamic Programming, d- Waiting line Method	
	a)	Only a
	b)	Only b
	c)	Only c
	d)	With b and d
18.	The Vogel approximation method is used for solving transportation problems as it gives -	
	a)	neither optimum nor feasible solution
	b)	both optimum and feasible solution
	c)	Optimum but infeasible solution
	d)	Feasible but non-optimum solution
19.	In the Dual Simplex Method, the Initial Table represents a solution -	
	a)	that is feasible but not Optimal
	b)	that is both feasible and optimal
	c)	that is optimal but not feasible
	d)	neither optimal nor feasible
20.	For a Maximization LPP, if a constraint has a surplus variable, the artificial variable added in the Dual Simplex Method will have -	
	a)	positive large co-efficient in the objective function
	b)	negative large co-efficient in the objective function
	c)	zero co-efficient in the objective function
	d)	artificial variables are not required in Dual Simplex Method
21.	If the primal LPP is Maximization, the dual of the dual for the primal LPP is	
	a)	Minimization
	b)	Maximization
	c)	Can be Minimization or Maximization
	d)	Infeasible
22.	The optimal solution in a linear programming model will	
	a)	always be a slack variable
	b)	always be a surplus variable
	c)	always occur at an extreme point
	d)	always be outside the feasible solution space
23.	A company produces two products: Product A and Product B. Each product must go through two processes. Each Product A produced requires 2 hours in Process 1 and 5 hours in Process 2. Each Product B produced requires 6 hours in Process 1 and 3 hours in Process 2. There are 80 hours of capacity available each week in each process. Each unit of Product A produced generates $6.00 in profit for the company. Each unit of Product B produced generates $9.00 in profit for the company. If A = the number of units of Product A to produce each week and B = number of units of Product B to produce each week, then the capacity constraint for Process 2 would be	
	a)	$5A + 3B \geq 80$
	b)	$6A + 3B \leq 80$
	c)	$5A + 3B \leq 80$
	d)	$5A + 3B < 80$

24.	A company produces two products: Product A and Product B. Each product must go through two processes. Each Product A produced requires 2 hours in Process 1 and 5 hours in Process 2. Each Product B produced requires 6 hours in Process 1 and 3 hours in Process 2. There are 80 hours of capacity available each week in each process. Each unit of Product A produced generates $6.00 in profit for the company. Each unit of Product B produced generates $9.00 in profit for the company. The optimal weekly profit for the company would be	
	a)	$125
	b)	$150
	c)	$156
	d)	$162
25.	The following transportation table shows the cost of shipping one unit from each source to each destination in the upper right hand corner of each cell, as well as the supply capacities and demand requirements:	

		Destination			
		Los Angeles	New York	Houston	Supply
Source	Memphis	5	4	2	6,000
	Boise	3	6	4	3,000
	Omaha	6	5	3	8,000
	Demand	5,000	7,500	4,500	17,000

The optimal solution is:

		Destination		
		Los Angeles	New York	Houston
Source	Memphis	**0**	**1500**	**4500**
	Boise	**3000**	**0**	**0**
	Omaha	**2000**	**6000**	**0**

The total amount shipped from Boise to Los Angeles is:

	a)	3
	b)	6
	c)	3,000
	d)	5,000

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University of Mumbai

Examination 2020 under cluster

Program: BE Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: ILO7018 and Course Name: Energy Audit and Management

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Choose the correct source of renewable energy.
Option A:	Natural gas
Option B:	Coal
Option C:	Tidal
Option D:	Nuclear
Q2.	Primary energy content of all fuels are generally expressed in terms of
Option A:	KW
Option B:	KVA
Option C:	KVAR
Option D:	Ton of oil equivalent (toe)
Q3.	Which of the following is a form of secondary energy?
Option A:	Steam
Option B:	Petrol
Option C:	Crude oil
Option D:	Coal
Q4.	The objective of Energy Management is to
Option A:	Minimize energy costs
Option B:	Minimize production
Option C:	Minimize duration of work
Option D:	Minimize manpower
Q5.	Energy Audit is the key to a systematic approach for decision-making in the area of
Option A:	Time management
Option B:	Water management.
Option C:	Pollution management
Option D:	energy management
Q6.	The verification, monitoring and analysis of use of energy and its report with recommendations is
Option A:	Energy monitoring

Option B:	Energy Conservation
Option C:	Energy Audit
Option D:	energy management
Q7.	Bench-mark in Energy Audit refers to:
Option A:	Trend of energy use
Option B:	Profit margin in energy business
Option C:	Reference point for managing energy in organization
Option D:	Energy Losses
Q8.	Energy Audit can be classified into the following types.
Option A:	Short Audit and Lengthy Audit
Option B:	Preliminary Audit and Secondary Audit
Option C:	Feasible Audit and non-feasible Audit
Option D:	Preliminary Audit, targeted energy audit and Detailed Audit
Q9.	For charging Maximum demand charges, maximum demand is measured in
Option A:	kWh
Option B:	kVA
Option C:	kVAr
Option D:	KV
Q10.	Power factor is ratio of
Option A:	Active power to apparent power
Option B:	Active power to reactive power
Option C:	Reactive power to apparent power
Option D:	Apparent power to active power
Q11.	Maximum demand controller is used to
Option A:	Switch off non-essential loads in a logical sequence
Option B:	Controls the power factor of the plant
Option C:	Switch off essential loads in a logical sequence
Option D:	Exceed the demand of the plant
Q12.	For which among the following consumers was penalty imposed for low power factor before 1st April, 2020
Option A:	Residential
Option B:	Industrial
Option C:	Agricultural
Option D:	BPL customers
Q13.	The basic functions of electronic ballast exclude one of the following:
Option A:	To ignite the lamp
Option B:	To reduce lumen output of the lamp
Option C:	To supply power to the lamp

Option D:	To stabilize the gas discharge
Q14.	Find the **odd** retrofit group for illumination from the following
Option A:	capacitor based control
Option B:	photo-sensors
Option C:	timer based control
Option D:	Occupancy sensors
Q15.	Motor loading calculation is based on
Option A:	Ideal load of motor
Option B:	actual operating load of motor
Option C:	90 % load of motor
Option D:	future load of the motor
Q16.	The motor input power Pi in pump can be measured by using
Option A:	Stroboscope
Option B:	Efficiency meter
Option C:	Portable power analyzer.
Option D:	Tachometer
Q17.	One Tons of refrigeration (TR) is equivalent to
Option A:	3420 Btu/h
Option B:	3024 kCal/h
Option C:	1200 thermal kW
Option D:	3024 kW/ton
Q18.	What does a LEED rating reflect?
Option A:	The cost of a building
Option B:	How green a building is
Option C:	The carbon footprint of a building's occupants
Option D:	The location of a building
Q19.	What is the name for the procedure used to clear buildings of contaminants before they are occupied?
Option A:	Flush-out
Option B:	Infiltration
Option C:	Ventilation
Option D:	Ex-filtration
Q20.	Which of the following trap has intermittent discharge for large load
Option A:	Inverted bucket
Option B:	Float
Option C:	Thermostatic
Option D:	Bimetallic

Q21.	Which is the best steam for an industrial process heating
Option A:	Dry saturated steam
Option B:	Wet steam
Option C:	Dry steam
Option D:	Superheated steam
Q22.	Which one is the most efficient equipment having Star rating
Option A:	2 star
Option B:	5 star
Option C:	4 star
Option D:	1 star
Q23.	Which one is NOT the reason of incomplete combustion
Option A:	Shortage of air
Option B:	Excess of fuel
Option C:	Poor distribution of fuel
Option D:	GCV of fuel
Q24.	The heat loss from the surface is expressed in
Option A:	Watt
Option B:	Watt/sq. meter-deg K
Option C:	Watt/sq. meter-deg C
Option D:	Joules
Q25.	Which is the purpose of insulation
Option A:	To facilitate free flow of heat
Option B:	Offers better process control by maintaining process temperature
Option C:	Reduce temperature of steam
Option D:	Refrigerated surface below due point

University of Mumbai

Examination 2020 under cluster

Program: BE____ _____ Engineering
Curriculum Scheme: Rev2016
Examination: Fourth Year Semester VII
Course Code: ILO7011 and Course Name: Product Life Cycle Management
Time: 1hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks .

Q1.	The PLC describes the stages a new product goes through in the---
Option A:	Introduction phase
Option B:	Test Market
Option C:	Product Development
Option D:	Market Place
Q2.	In introduction stage of PLC sales grow slowly and
Option A:	Competition becomes tough
Option B:	Profit is Minimal
Option C:	More Investors needed
Option D:	Profit is Maximum
Q3.	Marketing Objective for the maturity stage of PLC is
Option A:	Maintain Brand Loyalty
Option B:	Stress Differentiation
Option C:	Harvest
Option D:	Deletion
Q4.	PLC stage where Competitors appears is
Option A:	Introduction phase
Option B:	Decline Phase

Option C:	Maturity
Option D:	Growth
Q5.	The stage when the cost of gaining new Buyers increases
Option A:	Growth
Option B:	Introduction
Option C:	Maturity
Option D:	Pre-Investment
Q6.	Color and size of the product, brand and packaging are considered as,
Option A:	Chemical features of product
Option B:	Physical features of product
Option C:	Product designing
Option D:	Product manufacture
Q7.	Developing a unique superior product with high quality, new features, and high value in use is _____ in new product development strategy.
Option A:	New product development process
Option B:	Typical reasons for failure
Option C:	Success factors
Option D:	Product concept
Q8.	Reason of product failure associated with its feature is due to,
Option A:	Good quality of product
Option B:	Good quantity of product
Option C:	Poor quality of product
Option D:	Poor quantity of product

Q9.	Which of the following is the first step of product development process?
Option A:	Production ramp-up
Option B:	Prototyping
Option C:	Product design
Option D:	Identification of customer needs
Q10.	In which of the following stage of Product Development Process, a detailed specification for the product development and pricing is established?
Option A:	Launch
Option B:	Testing
Option C:	Feature specification
Option D:	Idea screening
Q11.	Product data management is the activity of _____
Option A:	Managing product data.
Option B:	Invention data recording.
Option C:	Managing computer for data.
Option D:	Manipulation of data.
Q12.	A _____ is a high-level data model that shows, from the user viewpoint, the main entities and the relationships between them. It may also define the entities, and show their attributes and structure
Option A:	Physical data model
Option B:	Conceptual data model
Option C:	Entity-relationship model
Option D:	Logical data model

Q13.	A_____ is a very detailed model that is specific to the technology (e.g., database). It shows how the data will be physically stored and accessed.
Option A:	Logical data model
Option B:	Conceptual data model
Option C:	Physical data model
Option D:	Entity relationship model
Q14.	Virtual product development is the Practice of _____ and developing the products in entire 2D/3D environment
Option A:	prototyping
Option B:	producing
Option C:	protecting
Option D:	purchasing
Q15.	____ is not the component of virtual product development
Option A:	Virtual product design
Option B:	Virtual product simulation
Option C:	Virtual product manufacturing
Option D:	shop floor manufacturing
Q16.	_____is not a part of digital manufacturing
Option A:	virtual plant design
Option B:	virtual process planning
Option C:	virtual assembly visualization
Option D:	realistic manufacturing
Q17.	Sustainability Science is the study of the concepts of sustainable development and--------- ___ .

Option A:	Environmental Science
Option B:	General Science
Option C:	Social science
Option D:	Geo science
Q18.	UN decade of education for Sustainable development
Option A:	2002-11
Option B:	2003-12
Option C:	2004-13
Option D:	2005-14
Q19.	Number of sustainable development goals (SDGs) by UN are
Option A:	15
Option B:	16
Option C:	17
Option D:	18
Q20.	LCA stands for
Option A:	life cycle assessment
Option B:	life cycle analogy
Option C:	Life cycle assurance
Option D:	Life cycle Array
Q21.	Product is the ultimate objective of variety reduction
Option A:	Simplification
Option B:	Standardization
Option C:	Specialization
Option D:	Socialization

Q22.	An attractive idea must be developed into a
Option A:	Product idea
Option B:	product concept
Option C:	Test market
Option D:	Product image
Q23.	There are _____ basic components of an EDM/PDM system
Option A:	NINE
Option B:	SEVEN
Option C:	SIX
Option D:	FIVE
Q24.	Select suitable potential reasons why to implement PDM
Option A:	Data missing in hard drives, systems not responding, less data is stored
Option B:	Life cycle is managed, less systems available, data is sufficient
Option C:	Data is not centralized, CAD versions are not supported, messed up with data in mapping
Option D:	Data is available but extended facility is not existing.
Q25.	Select suitable reasons, so that PDM can lead to major benefits
Option A:	Huge investments may attract more profits
Option B:	Eases data availability, no data is missing, data storage is done
Option C:	Generates revenues, quality of product improves
Option D:	Reduces product development times by 25%, reduces cost by 15%.

University of Mumbai

Examination 2020 under cluster

Program: BE Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: **ILO7014** Course Name: **Design of Experiments**

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	_____ is a vital part of the scientific (or engineering) method
Option A:	Evaluation
Option B:	Experimentation
Option C:	Estimation
Option D:	Authentication
Q2.	The general approach to planning and conducting the experiment is called the _____.
Option A:	Strategy of experimentation
Option B:	Method of experimentation
Option C:	Preparation of experimentation
Option D:	Outline of experimentation
Q3.	The basic principles of experimental design are____.
Option A:	Randomization, repetition, blocking
Option B:	Replication, blocking randomization
Option C:	Randomization, repetition, factorization
Option D:	Optimization, blocking, factorization
Q4.	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 most influential variables on the response y is called
Option A:	Process control
Option B:	Robust design
Option C:	Process characterization
Option D:	Process optimization

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Q5.	The strategy which fails to consider any possible interaction between the factors is called
Option A:	Multiple factors at a time (MFAT)
Option B:	one-factor-at-a-time (OFAT)
Option C:	Best guess
Option D:	Best fit
Q6.	Which of the following is a correct expression for a multiple linear regression model having three regressor variables?
Option A:	$y = x_1 + \beta_2 x_2 + \beta_3 x_3 + \epsilon$
Option B:	$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \epsilon$
Option C:	$y = \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3$
Option D:	$y = \beta_0 - \beta_1 x_1 + \beta_2 x_2 - \beta_3 x_3 + \epsilon$
Q7.	The _____is typically used to estimate the regression coefficients in a multiple linear regression model.
Option A:	Method of least squares
Option B:	Method of Jacobians
Option C:	Runge-Kutta Method
Option D:	Method of Moments
Q8.	In multiple linear regression problems, certain _____ about the model parameters are helpful in measuring the usefulness of the model.
Option A:	tests of hypotheses
Option B:	tests of uniqueness
Option C:	tests of convergence
Option D:	tests of divergence
$Q9.$	How many dependent variables does a two-way ANOVA have?
Option A:	Four
Option B:	Two
Option C:	Three
Option D:	One
Q10.	The analysis of variance will have _____ parts
Option A:	One
Option B:	Three
Option C:	Two
Option D:	Four

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Q11.	In Split spot design, Randomization is done in _____ stages
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q12.	In field experiments certain factors may require _____ plots than for others.
Option A:	Lesser
Option B:	Same
Option C:	Larger
Option D:	Small
Q13.	The key idea used for the successful implementation of fractional factorial design are _____.
Option A:	Sparsity of effects principle, randomization, repetition
Option B:	Sparsity of effects principle, projection property, sequential experimentation
Option C:	Sparsity of effects principle, projection property, randomization
Option D:	Sparsity of effects principle, projection property, randomization, repetition
Q14.	When we estimate A, B, and C with complementary one-half fraction, we are really estimating _____.
Option A:	(A X BC, B X AC, C X AB)
Option B:	(A + BC, B + AC, C + AB)
Option C:	(A – BC, B – AC, C – AB)
Option D:	(A – BC, B X AC, C + AB)
Q15.	ANOVA is a statistical method of comparing the _____ of several populations
Option A:	Variance
Option B:	Standard deviations
Option C:	Means
Option D:	Mean deviation
Q16.	In a factorial experiment _____.
Option A:	Testing one factor at a time
Option B:	Cannot estimate interactions
Option C:	all possible combination of factor levels are tested
Option D:	Levels are not tested
Q17.	Factorial designs allow us to study both _____ effects of the independent variables on the dependent(s).
Option A:	Main and interactive

Option B:	Rank order and correlational
Option C:	Symbiotic and dichotomous
Option D:	Dependent and independent
Q18.	What statistical procedure is used to assess the statistical significance of the main effects and the interaction(s) in a factorial design?
Option A:	Analysis of covariance
Option B:	Correlation
Option C:	T-test
Option D:	Analysis of variance
Q19.	Which of the following item is required to be considered in logistics of testing?
Option A:	a plan to acquire materials needed for various test combinations
Option B:	regression model
Option C:	Taguchi Orthogonal Array
Option D:	missing runs
Q20.	Which of the following is an example of a plan for identifying results of the experimental trials?
Option A:	conducting missing trials
Option B:	tagging parts with trial and repetition numbers
Option C:	confounding
Option D:	preparing data sheets
Q21.	Large 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
Q22.	Consistent results within a trial can be achieved with _____.
Option A:	good data sets
Option B:	bad data sets
Option C:	sample data sets
Option D:	conducting missing trials
Q23.	Which of the following is known as a structured approach for determining the ”best” combination of inputs to produce a product or service _____.
Option A:	Taguchi approach
Option B:	signal to noise ratio

Option C:	design of experiments
Option D:	linear regression
Q24.	The factors whose values are hard-to-control during normal process or use conditions are called as-
Option A:	control factors
Option B:	noise factors
Option C:	random factors
Option D:	robust factors
Q25.	Which of the following is not an example of common types of noise factors?
Option A:	environmental factors
Option B:	customer usage
Option C:	Degradation that occurs through usage and environmental exposure
Option D:	cake mixture ingredients