

University of Mumbai
Examination 2020- Inter Cluster

**NOTE: “These are sample MCQs to
indicate pattern, may or may
not appear in examination”**

University of Mumbai
Examination 2020- Inter Cluster

Program: BE Instrumentation Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ISDLO6022 and Course Name: Computer Organization and Architecture

Time: 1hour

Max. Marks: 50

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

Q1.	What is the value of n in multiplication of 110×1000 ?
Option A:	2
Option B:	3
Option C:	4
Option D:	0
Q2.	The special memory used to store the micro routines of a computer is _____
Option A:	Control table
Option B:	Control store
Option C:	Control mart
Option D:	Control shop
Q3.	_____ are numbers and encoded characters, generally used as operands.
Option A:	Input
Option B:	Data
Option C:	Information
Option D:	Stored Values
Q4.	The I/O interface required to connect the I/O device to the bus consists of _____
Option A:	Address decoder and registers
Option B:	Control circuits
Option C:	Address decoder, registers, and Control circuits
Option D:	Only Control circuits
Q5.	What will be the value obtained after multiplication of $(-2) \times (-3)$ using Booth's Algorithm?
Option A:	6
Option B:	-6
Option C:	-2
Option D:	-3

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Q6.	When we perform subtraction on -7 and 1 the answer in 2's complement form is _____
Option A:	1010
Option B:	1110
Option C:	0110
Option D:	1000
Q7.	To read the control words sequentially _____ is used.
Option A:	PC
Option B:	IR
Option C:	UPC
Option D:	IPR
Q8.	Every time a new instruction is loaded into IR the output of _____ is loaded into UPC.
Option A:	Starting address generator
Option B:	Loader
Option C:	Linker
Option D:	Clock
Q9.	The time delay between two successive initiations of memory operation _____
Option A:	Memory access time
Option B:	Memory search time
Option C:	Memory cycle time
Option D:	Instruction delay
Q10.	When 1101 is used to divide 100010010 the remainder is _____
Option A:	101
Option B:	11
Option C:	0
Option D:	1
Q11.	Highly encoded schemes that use compact codes to specify a small number of functions in each micro instruction is _____
Option A:	Horizontal organisation
Option B:	Vertical organisation
Option C:	Diagonal organisation
Option D:	Functional organization
Q12.	_____ are the different type/s of generating control signals.
Option A:	Micro-programmed
Option B:	Hardwired

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Option C:	Micro-instruction
Option D:	Both Micro-programmed and Hardwired
Q13.	A decoder is required in case of a _____
Option A:	Vertical Microinstruction
Option B:	Horizontal Microinstruction
Option C:	Multilevel Microinstruction
Option D:	All types of microinstructions
Q14.	The decimal numbers represented in the computer are called as floating point numbers, as the decimal point floats through the number.
Option A:	True
Option B:	False
Q15.	The numbers written to the power of 10 in the representation of decimal numbers are called as _____
Option A:	Height factors
Option B:	Size factors
Option C:	Scale factors
Option D:	Size & Scale factors
Q16.	The transmission unit does not require assistance from processor if once a byte for transmission is written to
Option A:	SCON register
Option B:	SBUF register
Option C:	SFR address
Option D:	TCON register
Q17.	The actual dataflow values among instructions, which produce results and those that consume those results, is known as
Option A:	Control flow
Option B:	Control hazard
Option C:	Data hazard
Option D:	Data flow
Q18.	IOP is specially designed for to handle the details of _____.
Option A:	Memory processing
Option B:	I/O processing
Option C:	CPU processing
Option D:	I/O processing & CPU processing
Q19.	A branch-prediction cache which is used to store the predicted address for the upcoming instruction after the branch, is called a
Option A:	Branch-target buffer
Option B:	Stations buffer

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Option C:	Write buffer
Option D:	Read buffer
Q20.	What registers are significantly incremented and decremented respectively for the transmission of each byte by Direct Memory Access (DMA) ?
Option A:	Address Register & Byte Count Register
Option B:	Control Register & Byte Count Register
Option C:	Transmitter Register & Byte Count Register
Option D:	Status- Register & Byte Count Register+
Q21.	Which of the following is not valid segment of three-stage instruction pipeline in RISC?
Option A:	F
Option B:	A
Option C:	E
Option D:	I
Q22.	Which is one of the major characteristics of RISC in concept of pipelining?
Option A:	Overlapped register window
Option B:	Few addressing modes
Option C:	Single-cycle instruction execution
Option D:	Hardwired control
Q23.	Delayed load & Delayed branch can be solutions of pipeline conflict in which two pipelines?
Option A:	Instruction pipeline & Arithmetic pipeline
Option B:	RISC pipeline & Instruction pipeline
Option C:	RISC pipeline & Arithmetic pipeline
Option D:	Only RISC pipeline
Q24.	Which of the following is not a solution of branch difficulties?
Option A:	Prefetch target buffer
Option B:	Loop buffer
Option C:	Delayed branch
Option D:	Branch buffer
Q25.	If the decimal point is placed to the right of the first significant digit, then the number is called _____
Option A:	Orthogonal
Option B:	Normalized
Option C:	Determinate
Option D:	Binary

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Program: BE Instrumentation Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ISDLO6023 and Course Name: Bio-sensors and Signal Processing

Time: 1hour

Max. Marks: 50

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Note to the students: - All Questions are compulsory and carry equal marks (02 marks each).

Q1.	The variation of the electrical potential associated with the passage of a pulse along the membrane of a muscle cell or a nerve cell is called _____
Option A:	Resting potential
Option B:	Action potential
Option C:	Half-cell potential
Option D:	Muscle potential
Q2.	Electrical impulses gather and accumulate in which part of a neuron, in order to initiate an action potential?
Option A:	Axon hillock
Option B:	Dendrites
Option C:	Axon terminal branches
Option D:	Node of Ranvier
Q3.	Electrode gel is applied to _____
Option A:	increase contact impedance
Option B:	equates contact impedance
Option C:	reduces contact impedance
Option D:	absorbs contact impedance
Q4.	The total operating range of the transducer is called _____
Option A:	Span
Option B:	Threshold
Option C:	Offset
Option D:	Drift
Q5.	Which of these biosensors use the principle of heat released or absorbed by a reaction?
Option A:	Potentiometric biosensor
Option B:	Optical biosensors
Option C:	Piezo-electric biosensors
Option D:	Calorimetric biosensors
Q6.	Ability of the sensor to repeat a measurement when put back in the same environment is called _____

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Option A:	Conformance
Option B:	Saturation
Option C:	Repeatability
Option D:	Threshold
Q7.	Potentiometer biosensors are used for the measurement of
Option A:	Pressure
Option B:	Temperature
Option C:	Humidity
Option D:	Level
Q8.	The linear variable differential transformer transducer is
Option A:	Inductive transducer
Option B:	Non-inductive transducer
Option C:	Capacitive transducer
Option D:	Resistive transducer
Q9.	Strain gauge is a
Option A:	Active device and converts mechanical displacement into a change of resistance
Option B:	Passive device and converts electrical displacement into a change of resistance
Option C:	Passive device and converts mechanical displacement into a change of resistance
Option D:	Active device and converts electrical displacement into a change of resistance
Q10.	Which of the following is not a problem of ion selective electrodes?
Option A:	Interference with other ions
Option B:	Output is influenced by ionic strength
Option C:	Drift in electrode potential during a sequence of measurements
Option D:	Can measure only positive ions
Q11.	For detection of OP compounds, in which change in pH accompanying the hydrolysis is sensed by
Option A:	Potentiometric biosensors
Option B:	Calorimetric biosensors
Option C:	Amperometric biosensors
Option D:	Immuno biosensors
Q12.	To move the coil in relation to the displacement, the core permeability has to be?
Option A:	Higher than air
Option B:	Lower than air
Option C:	Higher than iron core
Option D:	Lower than iron core
Q13.	Which of the following material is used to build photovoltaic cells?
Option A:	Celenuim
Option B:	Selenium
Option C:	Silicon
Option D:	Iron

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Q14.	When a static deflection is applied, the charge leaks as Piezo-electric materials have
Option A:	High resistance
Option B:	Low resistance
Option C:	High reactance
Option D:	Low reactance
Q15.	Which of the following is not the characteristic of ion selective electrodes?
Option A:	Available in different sizes and shapes
Option B:	Easy to use
Option C:	It is fragile
Option D:	It is insensitive to many ions
Q16.	In liquid membrane electrode, the liquid ion exchanger is held in a porous disc of ?
Option A:	Solid material
Option B:	Semi-permeable membrane
Option C:	Hydrophobic material
Option D:	Water absorbing material
Q17.	Optical fibers are not immune to
Option A:	Electronic disturbances
Option B:	Magnetic disturbances
Option C:	Electromagnetic disturbances
Option D:	Ambient light interference
Q18.	The piezoelectric sensor provides, mechanical and electrical forces to a biological medium in
Option A:	Transduction Manner
Option B:	Conjunction Manner
Option C:	Electroporation Manner
Option D:	Bilateral Manner
Q19.	Which of the following is not a type of isolation amplifier?
Option A:	Capactively coupled isolation amplifiers
Option B:	Optically isolated isolation amplifiers
Option C:	Resistive coupled isolation amplifiers
Option D:	Transformer type isolation amplifiers
Q20.	The technique for dividing signals into blocks of short segments for non-stationary signal is done by,
Option A:	STFT
Option B:	FFT
Option C:	SIFT
Option D:	DFT
Q21.	Decomposing signal into limited band components is known as
Option A:	Multiple band coding
Option B:	Narrow band coding
Option C:	Sub band coding

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Option D:	Half band coding
Q22.	To avoid involvement of the cable capacitance in the measuring circuit, capacitive transducers are?
Option A:	Thermally insulated
Option B:	Fluoropolymer insulated
Option C:	Rubber insulated
Option D:	Plastic insulated
Q23.	Determination of blood cholesterol concentration is based on the specific
Option A:	Enzymatic reaction
Option B:	Catalysis reaction
Option C:	Analytic reaction
Option D:	Metabolic reaction
Q24.	Agricultural commodities for consumer markets requires
Option A:	Recycling
Option B:	Processing
Option C:	Rendering
Option D:	Reinforcing
Q25.	Glucose biosensors are fabricated on disposable cartridge by technique of
Option A:	Wide film microfabrication
Option B:	Thick film microfabrication
Option C:	Thin film microfabrication
Option D:	Narrow film microfabrication