Question Paper

of

7th Batch

for

Women Scientists

Under WOS-C Scheme

2012

Q. 1) Which one among the following is a strong smelling agent added to LPG cylinder to help in the detection of gas leakage?

A) Ethanol
B) Thioethanol
C) Biodiesel
D) Chloroform

Q. 2) Brass and bronze are copper alloys, but both differ in chemical composition for additionally containing :

A) Zinc in brass and tin in bronze
B) Chromium in brass and nickel in bronze
C) Nickel in brass and tin in bronze
D) Tin in brass and zinc in bronze

Q. 3) The mathematical representation of second law of thermodynamics is :

A) $dU = dQ - dW$
B) $dQ = TdS$
C) $W = TdS$
D) $dU = C_v dT$

Q. 4) Flue gas viscosities at temperatures T_1, T_2 and T_3 were obtained as 0.02×10^{-3}, 0.03×10^{-3} and 0.04×10^{-3} kg/m/s respectively. This means that :

A) T1=T2= T3
B) T1 > T2 >T3
C) T1< T2 <T3
D) None of these

Q. 5) The most abundant rare gas in the atmosphere is :

A) Ar
B) Ne
C) He
D) Xe

Q. 6) The number of water molecules present in a drop of water (volume 0.0018 mL) at room temperature is :

A) 1.568×10^{3}
B) 6.023×10^{19}
C) 4.84×10^{18}
D) 6.023×10^{21}

Q. 7) The hydronium ion is :

A) H^+
B) HO^-
C) H_2^+
D) H_3O^+

Q. 8) Which among the following is the hardest form of carbon?

A) Coke
B) Graphite
C) Diamond
D) Charcoal

Q. 9) The half life period of an isotope is 2 hours. After 6 hours what fraction of the initial quantity of the isotope will be left behind?

A) 1/6
B) 1/3
C) 1/8
D) 1/4

Q. 10) Equal masses of oxygen, hydrogen and methane are kept under identical conditions. The ratio of the volumes of gases will be :

A) 2 : 16 : 2
B) 2 : 16 : 1
C) 1 : 16 : 2
D) 1 : 1 : 1

Q. 11) The members of a homologous series have :

A) The same physical properties
B) Different functional groups
C) Same chemical properties
D) Identical methods of preparation

Q. 12) The biodiesel mainly consists of :

A) Poly unsaturated fatty acids
B) Fatty acid methyl esters
C) Triglycerides
D) Alcohols

Q. 13) A substance above its critical temperature exists as :

A) Solid
B) Liquid
C) Gas
D) Saturated vapours

Q. 14) Which of the following is an intensive property?

A) Internal energy
B) Enthalpy
C) Density
D) Volume

Q. 15) Which gas has higher calorific value per unit mass of fuel

A) Hydrogen
B) CNG
C) LPG
D) Petrol

Q. 16) Two grams of radioactive substance is reduced to 0.25 gm during a period of 60 days. The half life period is

A) 10 days
B) 5 days
C) 20 days
D) Data insufficient to calculate

Q. 17) Butter is

A) Fat dispersed in water
B) Fat dispersed in milk
C) Fat dispersed in oil
D) Water dispersed in fat

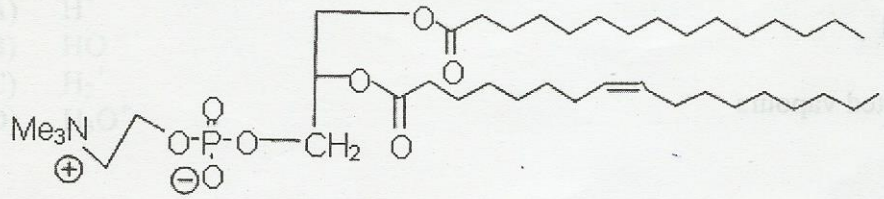
Q. 18) What is the full form of API?

A) Active Pharmaceutical Input
B) Active Pharmaceutical Ingredient
C) Annual Parasitic Index
D) Annual Pesticide Index

Q. 19) Pharmacokinetics is the effect of the ____ and pharmaco-dynamics is the effect of the_____.

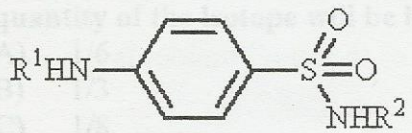
A) Drug on a drug; Body on the drug
B) Body on the drug; Drug on a drug
C) Drug on the body; Body on the drug
D) Body on the drug; Drug on the body

Q. 20) What type of molecule is the following structure?



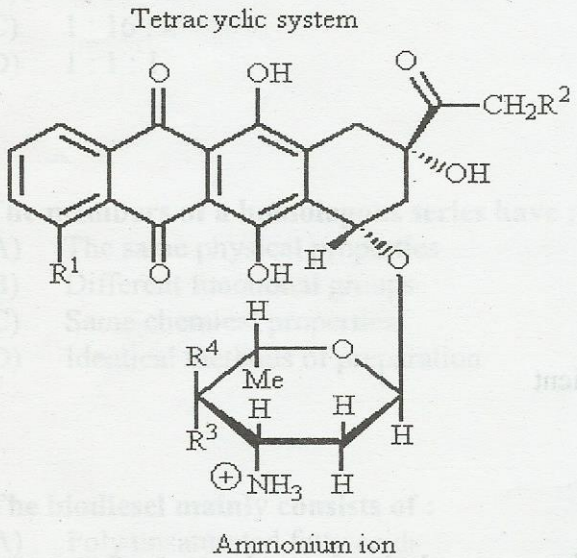
A) A protein.
B) A nucleic acid.
C) A phospholipid.
D) A carbohydrate.

Q. 21) The following general structure is representative of sulphonamides. Which one of the following statements is true for active sulphonamides?



A) R^1 can be H or an alkyl group
B) R^2 must be hydrogen
C) The aromatic ring is essential
D) The sulphonamide functional group can be replaced with an ester

Q. 22) Tetracyclines act as intercalating anticancer agents.



Which one of the following is a simplified analogue of tetracyclines?

A) Mitoxantrone
B) Teniposide
C) Daunorubicin
D) Dactinomycin

Q. 23) What are the two main targets currently used in anti-HIV therapy?

A) Reverse transcriptase and protease.
B) Reverse transcriptase and integrase.
C) Protease and integrase.
D) The viral glycoproteins gp120 and gp41.

Q. 24) The concentration of hydronium, H_3O^+, ions in a solution of with pH = 4.3 is:

A) 20×10^3 mol dm^{-3}
B) 5.0×10^{-5} mol dm^{-3}
C) 14×10^{-3} mol dm^{-3}
D) 74 mol dm^{-3}

Q. 25) Hydrogen fuel cell vehicles produce one of the following as "exhaust"

A) NH_3
B) CH_4
C) H_2O
D) H_2O_2

Q. 26) In a dry cell (battery), which of the following are used as electrolytes?

A) Ammonium chloride and Zinc chloride
B) Sodium chloride and Calcium chloride
C) Magnesium chloride and Zinc chloride
D) Ammonium chloride and Calcium chloride

Q. 27) What is NCE?

A) New Chemical Entity
B) Natural Chemical Entity
C) New Complex Entity
D) Novel Chemical Entity

Q. 28) What are counterfeit drugs?

A) Drug that is not prescribed, or taken for reasons or in dosages other than the prescribed dose and purpose.
B) Drug which is produced and sold with the intent to deceptively represent its origin, authenticity or effectiveness.
C) New drugs that have not yet been approved by the FDA or approved for a new use, and are in the process of being tested for safety and effectiveness.
D) A drug that is comparable to brand/reference listed in dosage form, strength, route of administration, quality and performance characteristics, and intended use of another company.

Q. 29) What is added with drug sub-classification, such as an anti-tubercular drug versus an antibacterial drug?

A) Cost
B) Size
C) Ionization
D) Precision

Q. 30) For a generic drug to be bioequivalent to an innovator drug (per FDA), it must be measured in ____ of subjects to fall within ____ of the mean of the test population bioavailability.

A) 50; 50
B) 80; 20
C) 20; 80
D) 95; 5

Q. 31) Which of the following is not surrounded by a double membrane in eukaryotes?

A) The cell
B) The nucleolus
C) Mitochondria
D) Chloroplasts

Q. 32) Penicillin acts as an antibiotic on susceptible bacteria by interfering with

A) Cell wall formation
B) The electron transport chain
C) DNA synthesis
D) Protein synthesis

Q. 33) A DNA sequence required for the partition of eukaryotic chromatids during mitosis is a

A) Telomere
B) Centromere
C) Centriole
D) Centrosome

Q. 34) The drug chloramphenicol blocks

A) Cell wall formation
B) Transcription
C) Translation termination release factors
D) Polypeptide chain elongation

Q. 35) Which of the following chemical mutagen is likely to cause frameshift mutations

A) 5-Bromo uracil
B) Acridine orange
C) 2- amino purine
D) Catalase

Q. 36) Bacterial enzyme that cut DNA at specific sites within the DNA molecule is called

A) Exonuclease
B) Restriction endonuclease II
C) Methylase
D) Transferase

Q. 37) Phytochrome is a

A) Blue protein pigment
B) Red protein pigment
C) Yellow protein pigment
D) None

Q. 38) Small subunits of rubisco are synthesized in the

A) Chloroplast
B) Cytoplasm
C) Mitochondria
D) Nucleus

Q. 39) Transcription is a process in which

A) DNA synthesis takes place
B) mRNA synthesis takes place
C) protein synthesis takes place
D) DNA and mRNA synthesis takes place

Q. 40) A nucleotide consists of:

A) Nitrogenous base
B) Nitrogenous base + pentose sugar
C) Nitrogenous base + phosphate
D) Nitrogenous base + pentose sugar + phosphate

Q. 41) The clones are

A) Genetically identical
B) Phenotypically identical
C) Homozygous at all the loci
D) Not affected by a change of the environment

Q. 42) Photosystem II oxidizes water to oxygen in the

A) Stroma lamellae
B) Thylakoid lumen
C) Thylakoid membrane
D) None

Q. 43) Svedberg unit, a measure of size of ribosome particle is determined through :

A) Centrifugation
B) Molecular weight
C) Crystallography
D) RNA binding

Q. 44) Peptide bonds are formed by involving :

A) Two amino groups
B) Two carboxyl groups
C) Two keto groups
D) One carboxyl and one amino group

Q. 45) Purity of enzyme depend upon :

A) Turn over number of enzyme
B) Catalytic power of enzyme
C) Enzyme units
D) Specific activity of enzyme

Q. 46) Name the enzyme, which converts RNA to DNA :

A) DNA dependent DNA polymerase
B) RNA dependent DNA polymerase
C) DNA dependent RNA polymerase
D) DNA polymerase

Q. 47) The international unit for enzyme activity is the amount of enzyme which at 30°C will convert substrate to product at the rate of :

A) 1 micromole/min
B) 1 micromole/sec
C) 1 millimole/min
D) 1 millimole/sec

Q. 48) Jasmonic acid helps in :

A) Plant defence against pathogen
B) Apical dominance
C) Photophosphorylation
D) None

Q. 49) The pathway that participates in the biosynthesis of most plant phenolics is

A) Shikimic acid pathway
B) ODC pathway
C) ADC pathway
D) None

Q. 50) Neurodegenerative diseases are result of gradual loss of structure or function of neurons. Which of the following is a neurodegenerative disease:

A) Diabetes
B) Crohn's Disease
C) Parkinson's Disease
D) Foot and mouth disease

Q. 51) The direction of protein synthesis was determined by which of the following:

A) Lowry's Method
B) Pulse labelling
C) GUS histochemical assay
D) Light microscopy

Q. 52) EcoRI , a type II restriction endonuclease recognises the following DNA sequence:

5'- G A A T T C -3'
3'- C T T A A G -5'
Such a sequence is a :

A) Palindrome
B) Primer
C) Ribozyme
D) Hairpin Loop

Q. 53) Which of the following is known as energy crop:

A) Catharanthus
B) Jatropha
C) Eggplant
D) Marigold

Q. 54) *Caenorhabditis elegans*, a ....., is considered as a model organism for studying programmed cell death.

A) Sponge
B) Nematode
C) Fly
D) Fungus

Q. 55) Which of the following is known to have anticancer function in a human cell:

A) Intron
B) p53
C) GFP
D) Exon

Q. 56) The enzyme that changes its conformation upon binding of an effector molecule is called as :

A) Ribozyme
B) Allosteric enzyme
C) Apoenzyme
D) Co-enzyme

Q. 57) Which of the following is known as a natural genetic engineer

A) *Agrobacterium* species
B) *Mycobacterium tuberculosis*
C) Blue-green algae
D) *Rhizobium* species

Q. 58) Which of the following is an essential amino acid for human body:

A) Aspartic acid
B) Lysine
C) Asparagine
D) Alanine

Q. 59) How many cycles of polymerase chain reaction (PCR) are required to produce SIX amplicons of a single DNA (double stranded) molecule:

A) 1
B) 8
C) 6
D) 2

Q. 60) Twins that result from splitting of a zygote are termed as:

A) Heterozygotic
B) Monozygotic
C) Hermaphroditic
D) Dizygotic

Q. 61) Which of the following statements represents the first law of thermodynamics?

A) Cyclic integral of heat = Cyclic integral of Work
B) $Q = W$
C) $h = u + pv$
D) $pv = nRT$

Q. 62) Which of the following statements is true for internal combustion engines?

A) Petrol and diesel engines have a spark plug
B) Petrol engines have a spark plug and diesel engines do not
C) Diesel engines have a spark plug and petrol engines do not
D) Spark plug is not needed in internal combustion engines

Q. 63) For an electric room heater (rated at 'X' Watts) which of the following statements is correct?

A) Heat output rate = Heater rating
B) Heat output rate < Heater rating
C) Heat output rate > Heater rating
D) Heat output rate has no relation to heater rating

Q. 64) Steady state means that

A) No parameter changes with time
B) No parameter changes in x-direction
C) All parameters change at a given location
D) All parameters are same

Q. 65) An open system is one where

A) System mass is constant
B) Energy of the system is constant
C) Mass, but not energy, can cross the system boundary
D) Both energy and mass can cross the system boundary

Q. 66) Heat is defined as:

A) Energy contained in a body
B) Energy in a moving body
C) Energy crossing the system boundary due to a temperature difference
D) $mC(T_2 - T_1)$

Q. 67) A hot rod is placed in a room and is cooling by convection. The heat transfer rate is:

A) Proportional to its surface area
B) Proportional to its volume
C) Proportional to its diameter
D) None of the above

Q. 68) A composite plate is formed by pasting together two sheets, one 3 mm thick polyurethane foam and 1 mm thick aluminium sheet. The overall thermal conductivity of the plate will be:

A) Very similar to that of aluminium
B) Very similar to that of polyurethane
C) Mean of the thermal conductivity of the two materials
D) Better than that of either material

Q. 69) Motor cycle engines have fins whose purpose is to:

A) Improve the aesthetics
B) Improve the aerodynamics
C) Improve the heat transfer from engine to ambient air
D) Shift the centre of gravity to the correct location

Q. 70) Wet clothes are hung on a rope on the terrace of a house for drying. Which of the following parameters does NOT affect the rate of evaporation of water from the clothes?

A) The air velocity
B) Relative humidity of air
C) Thermal and/or solar radiations on the clothes
D) Specific heat of air

Q. 71) Liquid metal is poured into a sand mould and allowed to solidify after which the mould is broken and the part is obtained. This process is called:

A) Welding
B) Pouring
C) Casting
D) Solidifying

Q. 72) A drilling machine can be used for:

A) Only for making a hole
B) Cutting a plate
C) Bending an object
D) Making and threading a hole

Q. 73) A component is subjected to an annealing process in order to:

A) Improve its appearance
B) Change its shape
C) Reduce stresses in the material
D) Increase its hardness

Q. 74) Which of the following materials is NOT suitable for making ceramic parts:

A) Silicon nitride
B) Boron nitride
C) Titanium dioxide
D) Tungsten carbide

Q. 75) The keys of a computer keyboard are made of:

A) Copper
B) Plastic
C) Ceramic
D) Composite material

Q. 76) Towers for suspending power transmission lines are made of:

A) Plastic pipes
B) Rolled steel sections
C) Ceramics
D) Bamboo

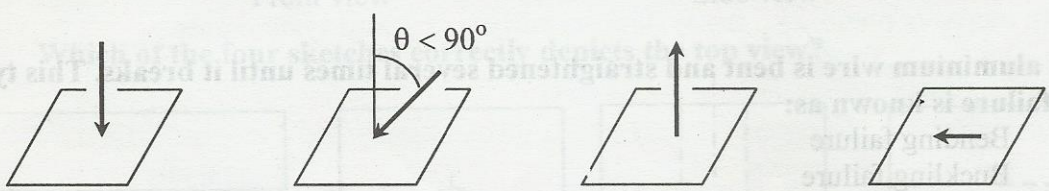
Q. 77) If a material can be drawn into long thin wires or thin foils, then the material is said to be:

A) Strong
B) Ductile
C) Hard
D) Flexible

Q. 78) Strain is defined as:

A) Time rate of change of length
B) Change of thickness
C) Ratio of change in length to undeformed length
D) Ratio of undeformed length to original length

Q. 79) Which of the following sketches represents a shear stress?

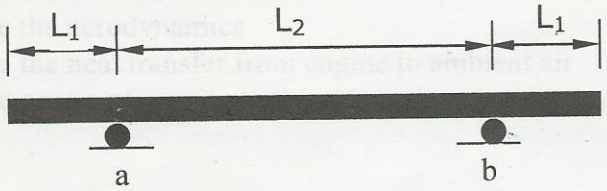


A) B) C) D)

Q. 80) Which of the following is not a stress?

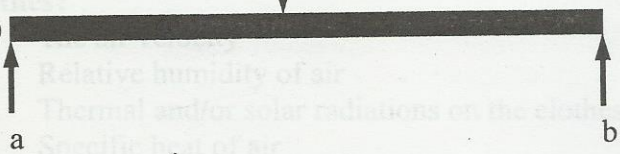
A) Shear stress
B) Normal stress
C) Torsional stress
D) Pressure stress

Q. 81) A steel beam of mass W tonnes is supported at two points 'a' and 'b' as shown below.

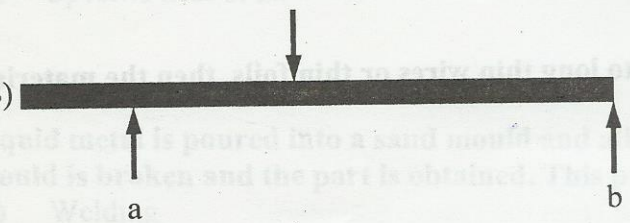


The free body diagram of the beam is given by:

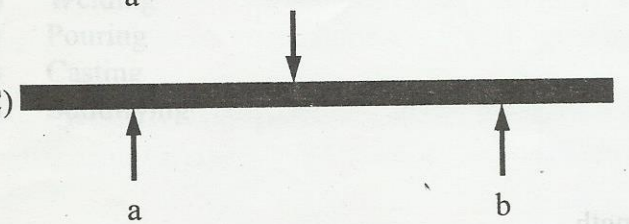
A)



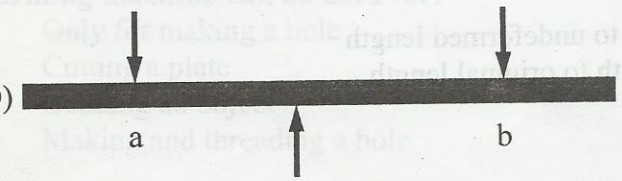
B)



C)



D)



Q. 82) An aluminium wire is bent and straightened several times until it breaks. This type of failure is known as:

A) Bending failure
B) Buckling failure
C) Fatigue failure
D) Impact failure

Q. 83) A body of mass 'm' is moving with velocity V (whose magnitude is v). The momentum of the body is given by:

A) mv
B) mV
C) $mv^2/2$
D) m($V \times V$)

Q. 84) In the cylindrical coordinate system a point *P* is represented as (r, θ, z). The position vector of *P*, $\vec{r}_P$ is:

A) $r\cos(\theta)\hat{e}_r + r\sin(\theta)\hat{e}_\theta + z\hat{k}$

B) $r\hat{e}_r + r\theta\hat{e}_\theta + z\hat{k}$

C) $r\hat{e}_r + z\hat{k}$

D) $r\hat{e}_r + \theta\hat{e}_\theta + z\hat{k}$

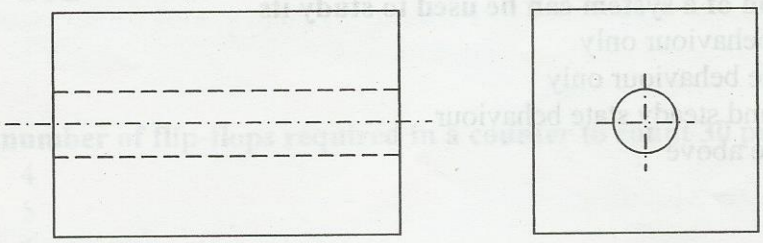
Q. 85) Given a force field $\vec{F} = F_1(x)\hat{i} + F_2(y)\hat{j} + F_3(z)\hat{k}$. $\vec{F}$ is:

A) Conservative
B) Non-conservative
C) Conservative only if $F_3 = 0$
D) Conservative only if $F_1 = F_2 = F_3$

Q. 86) A uniform spherical buoy floats on water. The metacentric height:

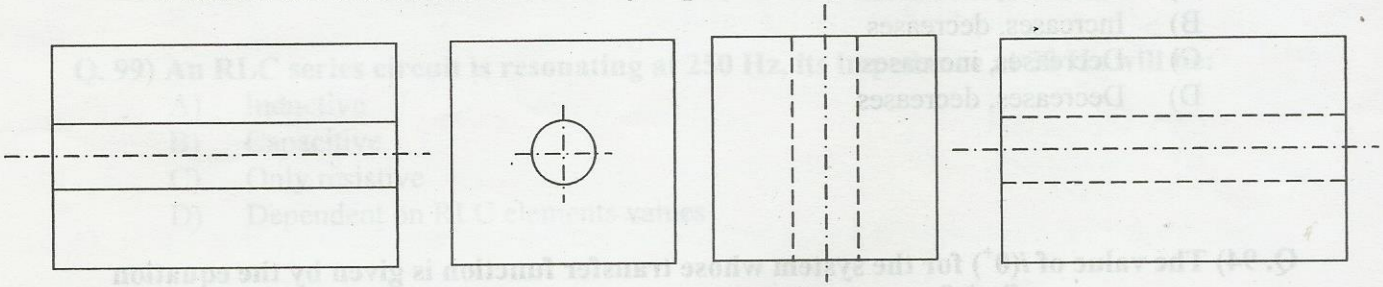
A) Is positive
B) Is negative
C) Is zero
D) Does not exist

Q. 87) The front and side views of an object (in 3rd angle projection) are given below.



Front view Side view

Which of the four sketches correctly depicts the top view?



(A) (B) (C) (D)

Q. 88) In industrial engineering the acronym CPM stands for

A) Critical Process Method
B) Continuous Process Management
C) Critical Path Method
D) Continuous Process Monitoring

Q. 89) In industrial engineering the acronym PERT stands for

A) Process Engineering and Research Technique
B) Programme Evaluation and Review Technique
C) Programme Execution and Review Technique
D) Planning Engineering Research Tasks

Q. 90) The queuing term "FIFO" stands for

A) Fast In Fast Out
B) Fixed In Fixed Out
C) First In First Out
D) First In Fast Out

Q. 91) In a critically damped system, the damping factor of the system is

A) Zero
B) Less than unity
C) Unity
D) Greater than unity

Q. 92) Transfer function of a system can be used to study its

A) Transient behaviour only
B) Steady state behaviour only
C) Transient and steady state behaviour
D) None of the above

Q. 93) With negative feedback, the system stability _____ and system gain _____

A) Increases, increases
B) Increases, decreases
C) Decreases, increases
D) Decreases, decreases

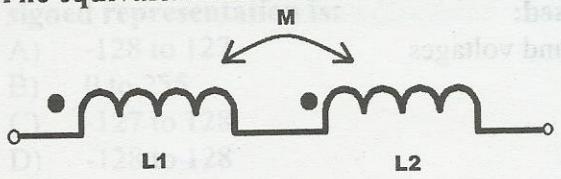
Q. 94) The value of $i(0^+)$ for the system whose transfer function is given by the equation $I(s) = \frac{2s+3}{(s+1)(s+3)}$ is

A) 0
B) 1
C) 2
D) 5/3

Q. 95) If the poles of a system are lying on the imaginary axis in *S* plane, the system will be

A) Conditionally stable
B) Stable
C) Marginally stable
D) Unstable

Q. 96) The equivalent inductance of the circuit is



A) L_1-L_2-2M
B) L_1+L_2+2M
C) L_1+L_2-M
D) L_1+L_2-2*M*

Q. 97) Which one of following logic family ICs is used in watches:

A) TTL
B) ECL
C) CMOS
D) DTL

Q. 98) The number of flip-flops required in a counter to count 30 pulses:

A) 4
B) 5
C) 6
D) 7

Q. 99) An RLC series circuit is resonating at 250 Hz, its impedance at 50 Hz will be:

A) Inductive
B) Capacitive
C) Only resistive
D) Dependent on RLC elements values

Q. 100) Distribution transformers are designed with:

A) Low full load voltage regulation
B) Low leakage reactances
C) High all day efficiency
D) All of above

Q. 101) The phase sequence of generated voltage of a 3-phase synchronous generator is ABC. If the direction of field current is reversed, the new phase sequence will be

A) ACB
B) CBA
C) BAC
D) CAB

Q. 102) Moving iron instruments can be used:

A) To measure ac and dc currents and voltages
B) To measure ac currents only
C) To measure ac voltage only
D) To measure dc voltages only

Q. 103) If 25 Coulombs of charge flows past a point in an electrical circuit in 5 s time, what is the steady current flow across the point?

A) 125 Amperes
B) 25 Amperes
C) 5 Amperes
D) 0.2 Amperes

Q. 104) A series RLC circuit with values of 1 Kohm, 0.1 Henry, and 1 microfarad respectively will have a minimum impedance of:

A) Approximately 0.0003 Ohm
B) 10 Ohm
C) 1000 Ohm
D) Approximately 3100 Ohm

Q. 105) If the differential gain of an amplifier is 100,000 and the common mode gain is 5, then the common mode rejection ratio is:

A) -43 decibels
B) 43 decibels
C) -86 decibels
D) 86 decibels

Q. 106) If the number of bits of an analog-to-digital converter is increased from 12 to 16, then the signal-to-quantization noise ratio is expected to:

A) Increase by 4 decibels
B) Decrease by 4 decibels
C) Increase by 24 decibels
D) Remain the same

Q. 107) If A and B are two Boolean variables, then the expression A + AB is equal to:

A) A
B) B
C) A + B
D) A.B

Q. 108) The range of decimal numbers that can be stored in binary twos complement 8 bit signed representation is:

A) -128 to 127
B) 0 to 255
C) -127 to 128
D) -128 to 128

Q. 109) Unicode is a standard for encoding:

A) Binary data
B) Text character sets
C) Decimal numbers
D) Image pixels

Q. 110) In a S-R flip-flop, the following S-R input combination is not valid:

A) 0 0
B) 1 0
C) 1 1
D) 0 1

Q. 111) A Gaussian random variable with zero mean and standard deviation equal to 1 has the following approximate probability of lying between -1 and +1:

A) 0.32
B) 0.68
C) 0.95
D) 0.99

Q. 112) If a 455 KHz signal is amplitude modulated by a 5 KHz audio signal, the upper frequency limit of the signal will be:

A) 5 KHz
B) 450 KHz
C) 455 KHz
D) 460 KHz

Q. 113) An analog phase locked loop does not contain the following block:

A) Phase detector
B) Loop filter
C) Voltage controlled oscillator
D) Symbol decoder

Q. 114) The effect of multipath in a digital communication channel is to:

A) Increase the signal bandwidth
B) Increase the symbol time-spread
C) Decrease the signal bandwidth
D) Decrease the symbol time-spread

Q. 115) Which of the following is not used to measure temperature:

A) Photo Diode
B) Thermistor
C) RTD
D) Thermocouple

Q. 116) In a common-emitter amplifier configuration of an NPN transistor, the input and output junctions respectively are the:

A) Base and emitter
B) Collector and emitter
C) Base and collector
D) Emitter and collector

Q. 117) In the monitor mode, the ECG low pass filter cut-off frequency is set to about:

A) 4 Hz
B) 40 Hz
C) 400 Hz
D) 4000 Hz

Q. 118) Which of the following statements is true about a pH meter?

A) It measures the neural activity of the brain
B) It measures the hydrogen cation activity in a fluid
C) It measures the speed of fluid flow
D) It measures radioactivity level in air

Q. 119) An ECG sensor measures:

A) Sound pressure level
B) Electrical potential
C) Vibration
D) Fluid velocity

Q. 120) An uncompressed colour image of size 1280 x 800 pixels and 8 bits per primary will have the following approximate size:

A) 10 KB
B) 1 MB
C) 3 MB
D) 10 MB

Q. 121) Binary multiplication of 11011 x 101 is

A) 11110011
B) 10000111
C) 10101101
D) 10010011

Q. 122) An assembler is

A) Programming language dependent
B) Syntax dependent
C) Machine dependent
D) Data dependent

Q. 123) Analysis which determines the meaning of a statement once its grammatical structure becomes known is termed as

A) Syntax Analysis
B) Semantic Analysis
C) General Analysis
D) Regular Analysis

Q. 124) Which of the following refers to the associative memory?

A) The address of the data is generated by the CPU
B) The address of the data is supplied by the users
C) There is no need for an address i.e. the data is used as an address
D) The data are accessed sequentially

Q. 125) Which of the following is a block device?

A) Disk
B) Terminals
C) Printer
D) Mouse

Q. 126) Poor response time are caused by

A) Processor busy
B) High I/O rate
C) Page fault
D) All of the above

Q. 127) A relationship between processes such that each has some part (critical section) which must not be executed while the critical section of another is being executed, is known as

A) Semaphore
B) Mutual exclusion
C) Multiprogramming
D) Multitasking

Q. 128) An instruction in a programming language that is replaced by a sequence of instructions prior to assembly or compiling is known as

A) Macro
B) Label
C) Procedure name
D) None of the above

Q. 129) Which of the following is true about pseudo code

A) A machine language
B) A high-level language
C) An assembly language
D) None of the above

Q. 130) A UML diagram includes which of the following?

A) Class name
B) List of attributes
C) List of operations
D) All of the above

Q. 131) The benefits of object-oriented modeling are which of the following?

A) The ability to tackle more challenging problems
B) Reusability of analysis, design, and programming results
C) Improved communication between users, analysts, etc.
D) All of the above

Q. 132) The data from a spreadsheet needs to be imported into a database package. Which file format would be the most appropriate when saving the spreadsheet file

A) CSV
B) HTML
C) PDF
D) RTF

Q. 133) Which of the following would indicate that the motherboard battery has failed?

A) Operating system passwords are lost
B) Files on the hard disk are lost and corrupted
C) Hardware settings, including virtual memory reverts to default values
D) Hardware settings, including the current date and time reverts to default values

Q. 134) Which type of memory is volatile?

A) Cache
B) ROM
C) RAM
D) All of the above

Q. 135) Database schema is written in

A) HLL
B) DDL
C) DML
D) DCL

Q. 136) In a Hierarchical model, records are organized as one

A) Graph
B) Link List
C) Links
D) Tree

Q. 137) The method of access which uses key transformation is known as

A) Direct
B) Hash
C) Random
D) Sequential

Q. 138) A logical schema

A) Is the entire database
B) Is a standard way of organizing information into a accessible part
C) Describe how data is actually stored on disk
D) None of these

Q. 139) A B-tree of order 'm' has maximum of _____ children

A) m
B) m-1
C) m+1
D) m/2

Q. 140) Why IP protocol is considered as unreliable

A) A packet may be lost
B) Packet may arrive out of order
C) Duplicate packets may be generated
D) All of the above

Q. 141) Communication circuits that transmit data in both directions but not at the same time are operating in

A) A simplex mode
B) A half-duplex mode
C) A full duplex mode
D) An asynchronous mode

Q. 142) The _____ determines whether the project should go forward.

A) Feasibility assessment
B) Opportunity identification
C) System evaluation
D) Program specification

Q. 143) The make-or-buy decision is associated with the _____ step in the SDLC

A) Problem/Opportunity Identification
B) Design
C) Analysis
D) Development and Documentation

Q. 144) How many bits are required to store 120(decimal) in binary notation

A) 6
B) 7
C) 8
D) 9

Q. 145) What is the number of edges in a tree of 'n' nodes

A) greater than 'n'
B) less than 'n-1'
C) 'n+1'
D) 'n-1'

Q. 146) Which is the fastest algorithm (on average) for sorting 'n' numbers

A) Interchange Sort
B) Bubble Sort
C) Quick Sort
D) All are equal

Q. 147) Which of these is open source software

A) Windows
B) Linux
C) Oracle
D) MS Word

Q. 148) Google is a

A) Database
B) Operating System
C) Search engine
D) Compiler

Q. 149) Modem stands for

A) A type of secondary memory
B) Modulator demodulator
C) Mainframe operating device memory
D) None of the above

Q. 150) The coding of data to keep it safe from unauthorized users is called _____

A) Locking
B) Hiding
C) Shading
D) Encryption

Q. 151) I'd like _____ information, please.

A) An
B) Some
C) Piece
D) A piece

Q. 152) _____to TIFAC yesterday?

A) Do you walk
B) Did you walk
C) Did you walked
D) Have you walked

Q. 153) I went to the shop _____ some chocolate

A) for buying
B) for buy
C) to buy
D) buy

Q. 154) Which of the following is correct?

A) Successor of predecessor of 1000 is 1002.
B) Predecessor of successor of 1000 is 1000.
C) Predecessor of predecessor of 1000 is 999.
D) Successor of predecessor of 1000 is 1001.

Q. 155) If 'ABLE' is coded as 23-24-8-1, how will you code 'DARK'?

A) 25-22-13-6
B) 26-23-14-7
C) 26-24-12-6
D) 26-23-13-7

Q. 156) Shyam travels 7 km to the north. Then he turns to the right and walks 3km. Then again he turns to his right and moves 7 km forward. How many kilometers away is he from the starting point?

A) 10 km
B) 20 km
C) 13 km
D) 3 km

Q. 157) Water covers what percent of the earth's surface

A) 25%
B) 55%
C) 40%
D) 70%

Q. 158) Photobiology is the branch of science which is basically concerned with

A) How organisms see
B) How to record images of living systems with various optical instruments
C) The effects of visible and ultraviolet radiation on living systems
D) How living systems produce visible light

Q. 159) Which of the following explains why a sailboat can sail into the wind:

A) Bernoulli's Principle
B) Pascal's Law
C) Archimedes's Principle
D) Reynold's Numbers

Q. 160) As more of the water turns into ice, the temperature of the remaining liquid in a vessel:

A) Decreases
B) Increases
C) Remains same
D) Cannot be determined

Q. 161) A train can travel 50% faster than a car. Both start from point A at the same time and reach point B 75 kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. The speed of the car is

A) 100 km per hour
B) 110 km per hour
C) 120 km per hour
D) 130 km per hour

Q. 162) The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child

A) 4 years
B) 8 years
C) 10 years
D) 12 years

Q. 163) A family consists of two grandparents, two parents and three grandchildren. The average age of the grandparents is 67 years, that of the parents is 35 years and that of the grandchildren is 6 years. What is the average age of the family

A) 222/7 years
B) 322/7 years
C) 122/7 years
D) 422/7 years

Q. 164) In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 per kg.

A) 3:7
B) 7:3
C) 5:7
D) 7:5

Q. 165) A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The principal amount is

A) Rs. 650
B) Rs. 690
C) Rs. 698
D) Rs. 700

Q. 166) Sum of mode and median of the data 12, 15, 11, 13, 18, 11, 13, 12, 13 is

A) 25
B) 26
C) 31
D) 36

Q. 167) One of the factors of $X^2 - Z^2 + Y^2 - 2XY$ is

A) $X - Y + Z$
B) $X + Y - Z$
C) $X + Y + Z$
D) $Y + Z - X$

Q. 168) A patent can last for how long?

A) 20 years
B) Renewed every 10 years
C) 5 years
D) 15 years

Q. 169) For a patent to benefit from legal protection, it must have

A) Industrial application
B) Market potential
C) Scientific basis
D) All of these

Q. 170) Which of the following is not patentable under the Indian Patent Act?

A) Mathematical processes
B) Chemical processes
C) Manufacturing processes
D) New products

Q. 171) The moon is said to light up the night skies. What gives the moon this ability to shine?

A) Radiation produced by the moon's atmosphere
B) The sun's reflection off the moon
C) The luminous substance found on the moon's surface
D) Radiation from the Sun that is absorbed by the moon

Q. 172) What is 30° C in $^{\circ}$F?

A) 30° F
B) 86° F
C) 180° F
D) 102° F

Q. 173) What absorbs a portion of the radiation from the sun, preventing it from reaching the earth's surface?

A) Ozone
B) Chloroflorocarbon
C) Freon
D) Charon

Q. 174) Present ages of Rahul and Anil are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anil's present age in years?

A) 24
B) 25
C) 40
D) 36

Q. 175) A clock shows 8 o'clock in the morning. Through how may degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

A) 180
B) 144
C) 150
D) 90

Q. 176) Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

A) 1/2
B) 9/20
C) 2/5
D) 8/15

Q. 177) Which continent is Eritrea in?

A) Africa
B) Asia
C) Australia
D) Europe

Q. 178) Headquarters of UNO are situated at

A) New York, USA
B) Haque (The Netherlands)
C) Geneva
D) Paris

Q. 179) Golf player Vijay Singh belongs to which country?

A) USA
B) Fiji
C) India
D) UK

Q. 180) Who was the Chairman of the Drafting Committee of the Indian Constitution:

A) Rajendra Prasad
B) Dr.B. R. Ambedkar
C) C. Rajgopalachari
D) T. B. Sapru

Q. 181) Territorial waters of India extend up to how many nautical miles?

A) 8
B) 12
C) 16
D) 20

Q. 182) Which of the following Article deals with the Amendment to our Constitution?

A) 356
B) 368
C) 370
D) 371

Q. 183) Entomology is the science that studies

A) Behaviour of human beings
B) Insects
C) The origin and history of technical and scientific terms
D) The formation of rocks

Q. 184) For galvanizing iron, which of the following metals is used?

A) Aluminium
B) Copper
C) Lead
D) Zinc

Q. 185) Fathometer is used to measure

A) Earthquakes
B) Rainfall
C) Ocean depth
D) Sound intensity

Q. 186) Ecology deals with

A) Birds
B) Cell formation
C) Relation between organisms and their environment
D) Tissues

Q. 187) Euclid was

A) Greek mathematician
B) Contributor to the use of deductive principles of logic as the basis of geometry
C) Propounded the geometrical theorems
D) All of the above

Pick out the most effective word(s) from the given words to fill in the blank to make the sentence meaningfully complete.

Q. 188) I saw a ..... of cows in the field.

A) Group
B) Herd
C) Swarm
D) Company

Q. 189) The ruling party will have to put its own house ..... order

A) In
B) On
C) Into
D) To

Q. 190) Synonym for EMBEZZLE is ..

A) Misappropriate
B) Balance
C) Remunerate
D) Clear

Comprehension for Q.191 & Q.192 only

I felt the wall of the tunnel shiver. The master alarm squealed through my earphones. Almost simultaneously, Jack yelled down to me that there was a warning light on. Fleeting but spectacular sights snapped into and out of view, the snow, the shower of debris, the moon, looming close and big, the dazzling sunshine for once unfiltered by layers of air. The last twelve hours before re-entry were particularly bone-chilling. During this period, I had to go up in to command module. Even after the fiery re-entry splashing down in 81° water in south pacific, we could still see our frosty breath inside the command module.

Q. 191) The word 'Command Module' used twice in the given passage indicates perhaps that it deals with

A) An alarming journey
B) A Commanding situation
C) A Journey into outer space
D) A frightful battle

Q. 192) Which one of the following reasons would one consider as more as possible for the warning lights to be on?

A) There was a shower of debris.
B) Jack was yelling
C) A catastrophe was imminent
D) The moon was looming close and big

Q. 193) 'Fair use' is a term most relevant to:

A) Intellectual Property Rights
B) Books borrowed for home reading
C) Copyright
D) Use of reference books

Q. 194) WIPO stands for:

A) World Information and Patents Organization
B) World Intellectual Property Organization
C) World International Property Organization
D) World Information Protection Organization

Q. 195) BERN CONVENTION (1886) is concerned with:

A) Translations
B) Copyright
C) Patent
D) Standards

Q. 196) The invisible web refers to-

A) The internet, since we cannot see it
B) That part of the internet, which is hidden from the search engines
C) The telecommunication signals which are not seen
D) The failure in accessing the web pages

Q.197) Which of the following is equivalent to $(x)(x)(x)(x^3)$, for all x?

A) $4x$
B) $6x$
C) x^6
D) $4x^6$

Q.198) In the standard (x,y) coordinate plane, the graph of $(x + 3)2 + (y + 5)2 = 16$ is a circle. What is the circumference of the circle, expressed in coordinate units?

A) 4π
B) 5π
C) 3π
D) 8π

Q.199) If the hypotenuse of a right triangle is 10 inches long and one of its legs is 5 inches long, how long is the other leg?

A) 5
B) $5\sqrt{3}$
C) $5\sqrt{5}$
D) 75

Q.200) What are the values of 'a' and 'b', if any, where - $a|b + 4| > 0$?

A) $a > 0$ and $b \neq -4$
B) $a > 0$ and $b \neq 4$
C) $a < 0$ and $b \geq -4$
D) $a < 0$ and $b \neq -4$

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