

Sample question paper

Master of Social Work

1. An NGO is registered under
 - a) Indian Penal Code
 - b) Society's Registration Act
 - c) Industrial Tribunal Act
 - d) ESI act
2. National Population Policy was adopted in the year
 - a) 1998
 - b) 2000
 - c) 2002
 - d) 2004
3. The goal of Social Work is
 - a) to reduce social tensions
 - b) to provide services to all
 - c) to promote social justice
 - d) to service the elite
4. The National Health Policy was endorsed by parliament of Indian in
 - a) 1980
 - b) 1981
 - c) 1982
 - d) 1983
5. The Universal Declaration of Human Rights was adopted in
 - a) 1944
 - b) 1945
 - c) 1947
 - d) 1948
6. National Human Rights commission was created in the year
 - a) 1963
 - b) 1973
 - c) 1983
 - d) 1993
7. Social Welfare traditionally includes
 - a) Relief
 - b) Curative services
 - c) Rehabilitative services
 - d) All of these
8. The 12th Five year plan period is
 - a) 2007-2012
 - b) 2012-2017
 - c) 2017-2022
 - d) 2002-2007
9. Open hand monument of Chandigarh stand for?
 - a) Friend ship and welcome
 - b) Good luck
 - c) Peace and reconciliation
 - d) None of these
10. NGT stands for
 - a) National Green Tribunal
 - b) National Green Trust
 - c) National Grand Trust
 - d) National Gold Tribunal

Sample Question Paper
M. Tech. (Nano Science & Nano Technology)

- Q.1 The material which can be deformed permanently by heat and pressure is called:
 (A) Thermoplastic
 (B) Chemical compound
 (C) Polymer
 (D) Thermoset
- Q.2 A light and a heavy body have equal momentum. Which one has greater kinetic energy?
 (A) The light body
 (B) The heavy body
 (C) Both have equal kinetic energy
 (D) No correlation is possible with given data
- Q.3 Suppose the gravitational force varies inversely as the n^{th} power of the distance. Then the time period of a planet in circular orbit of radius R around the sun will be proportional to
 (A) R^{-n}
 (B) $R^{(n-1)/2}$
 (C) R^n
 (D) $R^{(n+1)/2}$
- Q.4 The term **PVC** used in the polymer industry stands for
 (A) Polyvinyl chloride
 (B) Phosphor vanadium chloride
 (C) Polyvinyl carbonate
 (D) Phosphaviny chloride
- Q.5 A bend in a levelled road has a radius of 100 m. Find the maximum speed at which a car turning this bend may have without skidding. If the coefficient of friction between the tyres and the road is 0.8:
 (A) 28 m/s
 (B) 40 m/s
 (C) 80 m/s
 (D) 32 m/s
- Q.6 The number of moles of solute in 1kg of a solvent is called its:
 (A) Molality
 (B) Molarity
 (C) Normality
 (D) Formality
- Q.7 Most electronegative element among the following is:
 (A) Sodium
 (B) Bromine
 (C) Fluorine
 (D) Oxygen
- Q.8 Pollen grains of a plant whose $2n=28$ are cultured to get callus by tissue culture method. What would be the number of chromosomes in the cells of the callus?
 (A) 21
 (B) 56
 (C) 14
 (D) 28
- Q.9 The most commonly used bleaching agent is:
 (A) Alcohol
 (B) Chlorine
 (C) Carbon dioxide
 (D) Sodium chloride
- Q.10 What is LINUX?
 (A) Malware
 (B) Firmware
 (C) Application program
 (D) Operating system
- Q.11 The inherited traits of an organism are controlled by:
 (A) RNA molecules
 (B) DNA molecules
 (C) Nucleotides
 (D) Peptides
- Q.12 BT bringle is an example of transgenic crops. In this, BT refers to:
 (A) Bascillus tuberculosis
 (B) Betacarotene
 (C) Biotechnology
 (D) Bacillus thuringiensis
- Q.13 Insulin is a polymer of :
 (A) Glucose
 (B) Fructose
 (C) Galactose
 (D) Arbinose
- Q.14 Which stage of malarial parasite is infective to man?
 (A) Gametocyte
 (B) Merozoite
 (C) Cryptomerozoites
 (D) Sporozoite
- Q.15 In which of the following form, the data is stored in a computer?
 (A) Decimal
 (B) Hexadeciaml
 (C) Binary
 (D) Octal

SAMPLE MULTIPLE CHOICE QUESTIONS FOR M.E. (CHEMICAL)

Pick-up the correct option:

1. One mole of Nitrogen at 8 bar and 600K is contained in a piston-cylinder arrangement. It is brought to 1 bar isothermally against a resisting pressure of 1 bar. The work done (in Joules) by the gas is
 - (a) 30554
 - (b) 10373
 - (c) 4988.4
 - (d) 4364.9
2. For water at 300°C, it has a vapour pressure 8592.7 kPa and fugacity 6738.9 kPa. Under these conditions, one mole of water in liquid phase has a volume 25.28 cm³, and that in vapour phase 391.1 cm³. Fugacity of water (in kPa) at 9000 kPa will be
 - (a) 6738.9
 - (b) 6753.5
 - (c) 7058.3
 - (d) 900
3. A dilute aqueous solution is to be concentrated in an evaporator system. High pressure steam is available. Multiple effect evaporator system is employed because.
 - (a) total heat transfer area of all the effects is less than that in a single effect evaporator system
 - (b) total amount of vapour produced per kg of feed steam in a multieffect system is much higher than in a single effect
 - (c) boiling point elevation in a single effect system is much higher than that in any effect in a multieffect system.
 - (d) heat transfer coefficient in a single effect is much lower than that in any effect in a multieffect system
4. Minimum reflux ratio in a distillation column results in
 - (a) Optimum number of trays
 - (b) Minimum reboiler size
 - (c) Maximum condenser size
 - (d) Minimum number of trays
5. An elementary liquid phase decomposition reaction $A \xrightarrow{k} 2B$ is to be carried out in a CSTR. The design equation is
 - (a) $k\tau = \frac{X_A}{(1 - X_A)}$
 - (b) $k\tau = X_A \frac{(1 - X_A)}{1 - X_A}$
 - (c) $k\tau = \frac{X_A}{(1 - X_A)}$
 - (d) $k\tau C_{AO} = \frac{X_A / (1 + X_A)^2}{(1 - X_A)^2}$
6. Match the following dimensionless numbers with the appropriate ratio of forces.

	Dimensionless Number	Ratio of forces
P	Froude Number	1. Shear force/internal force
Q	Reynolds Number	2. Convective heat transfer/conductive heat transfer
R	Friction Factor	3. Gravitational force/viscous force
S	Nusselt Number	4. Inertial force/viscous force
		5. Inertial force/ gravitational force

 - (a) P-1, Q-2, R-5, S-3
 - (b) P-5, Q-4, R-3, S-2
 - (c) P-5, Q-4, R-1, S-2
 - (d) P-3, Q-4, R-5, S-1
7. A process stream of dilute aqueous solution flowing at the rate of 10 Kg s⁻¹ is to be heated. Steam condensate at 95°C is available for heating purpose, also at a rate of 10 kgs⁻¹. A 1-1 shell and tube heat exchange is available. The best arrangement is
 - (a) counterflow with process stream on shell side

- (b) counterflow with process stream on tube side
 - (c) parallel flow with process stream on shell side
 - (d) parallel flow with process stream on tube side
8. The Reynolds Number of the liquid was increased 100 fold for a laminar falling film used for gas-liquid contacting. Assuming penetration theory is applicable, the fold-increase in the mass transfer coefficient (k_c) for the same system is:
- (a) 100
 - (b) 10
 - (c) 5
 - (d) 1
9. A closed-loop system is stable when the gain margin is:
- a. >1
 - b. <1
 - c. 1
 - d. Zero
10. The aerosols important in air pollution range from:
- e. 0.01 to 100 μm
 - f. 100 μm to 100 μm
 - g. 0.001 μm to 0.01 μm
 - h. $<0.001 \mu\text{m}$
11. The order of convergence in Newton-Raphson method is:
- i. 2
 - j. 3
 - k. 0
 - l. 1
12. Runge-Kutta method is used to solve:
- m. linear algebraic equations
 - n. linear simultaneous equations
 - o. ordinary differential equations of first order and first degree with given initial condition
 - p. partial differential equations

SAMPLE QUESTIONS FOR M.E. (FOOD TECHNOLOGY)

- | | |
|--|--|
| <p>1. The limiting value of Sherwood number for mass transfer from a spherical object is equal to</p> <ul style="list-style-type: none"> (A) 2 (B) 3 (C) 4 (D) 0.5 <p>2. The primary protein in milk is</p> <ul style="list-style-type: none"> (A) casein (B) tryptophan (C) lysine (D) glutenin <p>3. Percentage of fat in butter is</p> <ul style="list-style-type: none"> (A) 50 (B) 60 (C) 70 (D) 80 <p>4. The power consumed by a drum dryer depends upon</p> <ul style="list-style-type: none"> (A) Drum speed (B) Steam Pressure (C) Pressure exerted by the blade on the drums (D) Length and diameter of the drum | <p>5. Freeze drying time is directly proportional to the _____ of the material being dried.</p> <ul style="list-style-type: none"> (A) thickness (B) square of the thickness (C) cube of thickness (D) fourth power of thickness <p>6. With increase in concentration of solute in a solution, boiling point</p> <ul style="list-style-type: none"> (A) decreases (B) increases (C) remains constant (D) none of these <p>7. The major forces acting in cyclone separator are</p> <ul style="list-style-type: none"> (A) gravity and centrifugal (B) gravity and centripetal (C) centrifugal and centripetal (D) None of these <p>8. Ultra filtration is used for production of</p> <ul style="list-style-type: none"> (A) Butter (B) Ghee |
|--|--|

- (C) Cheese
(D) Ice-cream
9. Vacuum packaging is normally used for
(A) milk powder
(B) paneer
(C) yoghurt
- (D) None of these
10. The water activity of free water should be
(A) 1
(B) less than one
(C) more than one
(D) 0

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| | | 5. | Inertial force/gravitational force |

- (e) P-1, Q-2, R-5, S-3
- (f) P-5, Q-4, R-3, S-2
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- b. <1
- c. 1
- d. Zero

12. The aerosols important in air pollution range from:

- a. 0.01 to $100 \mu\text{m}$
- b. $100 \mu\text{m}$ to $100 \mu\text{m}$
- c. $0.001 \mu\text{m}$ to $0.01 \mu\text{m}$
- d. $<0.001 \mu\text{m}$

13. The order of convergence in Newton-Raphson method is:

- a. 2
- b. 3
- c. 0
- d. 1

14. Runge-Kutta method is used to solve:

- a. linear algebraic equations
- b. linear simultaneous equations
- c. ordinary differential equations of first order and first degree with given initial condition
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SAMPLE PAPER OF

M.E.(Chemical with specialization in Environmental Engineering)

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- 100
 - 10
 - 5
 - 1
9. A closed-loop system is stable when the gain margin is:
- >1
 - <1
 - 1
 - Zero
10. The aerosols important in air pollution range from:
- 0.01 to $100 \mu\text{m}$
 - $100 \mu\text{m}$ to $100 \mu\text{m}$
 - $0.001 \mu\text{m}$ to $0.01 \mu\text{m}$
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11. The order of convergence in Newton-Raphson method is:
- 2
 - 3
 - 0
 - 1
12. Runge-Kutta method is used to solve:
- linear algebraic equations
 - linear simultaneous equations
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 - partial differential equations

SAMPLE QUESTIONS FOR M.TECH. (POLYMER)

Pick-up the correct option:

- Polymer formed in cationic Polymerization has
 - narrow molecular weight distributions
 - medium molecular weight distributions
 - broad molecular weight distributions
 - general isotactic structure
- Thermokol is the trade name of
 - high impact polystyrene
 - general purpose polystyrene
 - acrylonitrile-butadiene-styrene
 - expanded polystyrene
- The order of convergence in Newton-Raphson method is:
 - 2
 - 3
 - 0
 - 1
- Runge-Kutta method is used to solve:
 - linear algebraic equations
 - linear simultaneous equations
 - ordinary differential equations of first order and first degree with given initial condition
 - partial differential equations

5. For an isotherm process, pressure, P and Bulk modulus, K is related as:
- $K = P$
 - $K = P$
 - $K = P/$
 - $K = p^2$
6. Which one of the following fluids is essentially a non-Newtonian fluid under normal working conditions?
- blood
 - thin lubricating oil
 - water
 - air
7. The pressure drop per unit length of a pipe under laminar flow condition is:
- $\frac{32\mu V_{av}}{d^2}$
 - $\frac{128\mu Q}{\pi d^4}$
 - either (a) or (b)
 - none of these
8. The LMTD correction factor F_T :
- increases with decrease in number of shell passes
 - increases with increase in number of shell passes
 - remains constant with the increase in number of shell passes
 - any one of the above, depending upon the type of exchanger.
9. In case of a packed tower, HETP varies with:
- type and size of packing
 - flow rate of each fluid
 - concentration of each fluid
 - all of above
10. For a binary mixture at constant temperature, with the increase of total pressure, the relative volatility:
- decreases
 - increases
 - remains constant
 - none of these
11. An irreversible first order reaction is carried out in a PFTR and CSTR of same volume. The liquid flow rates are same in each reactor. The relative conversion will be:
- less in pftr than in cstr
 - more in cstr than in pftr
 - less in cstr than in pftr
 - same in each reactor
12. Grizzlies are used for screening solid particles of:
- large size
 - small size
 - very small size
 - any one of the above

SAMPLE QUESTIONS FOR M.SC. (INDUSTRIAL CHEMISTRY)

PART-A : MATHEMATICS

- Q.1. If x be real, $\frac{x^2 + 342 - 71}{x^2 + 2x - 7}$ can have no value between
- (3,7)
 - (4,8)
 - (5,9)
 - (10,15)
- Q.2. The set of equation $x + y - 2z = 0$, $2x - 3y + z = 0$, $x - 5y + yz = k$ is consistent for
- $K = 0$
 - $K = 1$
 - $K = 2$
 - $K = 5$
- Q.3. If $U = \frac{x^4 + y^4}{x + y}$, show that $x \frac{\partial U}{\partial x} + y \frac{\partial U}{\partial y}$ is equal to
- U
 - $2U$
 - $3U$
 - $5U$

PART-B: PHYSICS

- Q.4. Out of \vec{F}_m , \vec{V} and \vec{B} in the relation $\vec{F}_m = q(\vec{V} \times \vec{B})$ which of the following pairs can have any angle between them.
- \vec{V} and \vec{B}
 - \vec{F} and \vec{V}
 - \vec{F}_m and \vec{B}
 - None of the above
- Q.5. A body under the action of inverse square force will follow an elliptical path, if eccentricity
- $e=0$
 - $e=1$
 - $e>1$
 - $e<1$ (Positive)
- Q.6. If $\vec{B} = \text{curl } \vec{A}$, then
- $\vec{\nabla} \cdot \vec{B} = 0$
 - $\vec{\nabla} \cdot \vec{B} = 1$
 - $\vec{\nabla} \cdot \vec{B} = A$
 - $\vec{\nabla} \cdot \vec{B} = -1$

PART-C : CHEMISTRY

- Q.7. The IUPAC name for $\text{CH}_3\text{CH}_2 \cdot \text{C} \cdot \text{OCH}_3$ is
- $\begin{array}{c} \parallel \\ \text{O} \end{array}$
- methyl propanoate
 - Propanedioic acid
 - 2-propanol-1-ol
 - 3-oxo-1-methyl butane

- Q.8. The number of NMR signals for the compound $\text{CH}_3\text{OCH}_2\text{CH}_3$ is
- One signal (singlet)
 - Two signals (one singlet, one multiple)
 - Three signals (singlets)
 - Three signals (singlet, quartet, triplet)
- Q.9. When Propane is treated with HBr in the presence of a peroxide
- Bromopropene is formed
 - n-propyl bromide
 - Allyl bromide is formed
 - None of these

PART-D : INDUSTRIAL CHEMISTRY

- Q.10. The Fourier number (N_{Fo}) is defined as
- tL^2/α
 - hL/k
 - $\alpha t/L^2$
 - hk/L
- Q.11. Baffles are provided in the heat exchanger to increase
- fouling factor
 - heat transfer area
 - heat transfer coefficient
 - heat transfer rate
- Q.12. Relative volatility, α , for a binary system
- decrease with increase in pressure
 - increase with increase in pressure
 - increase with increase in temperature at constant pressure.
 - has no significance in distillation operation

SAMPLE QUESTIONS FOR

ME Electrical Engg. (Instrumentation & Control) Regular programme

- Which term applies to the maintaining of a given signal level until the next sampling?
 - Holding
 - Aliasing
 - Shannon frequency sampling
 - Stair-stepping
- What does a Hall Effect sensor sense?
 - Temperature
 - Moisture
 - Magnetic fields
 - Pressure
- Two copper-constantan thermocouples are connected such that the two constantan wires are joined together. The two copper wires are connected to the input of a low noise chopper stabilized differential amplifier having a gain of 1000. One of the thermocouple junctions is immersed in a flask containing ice and water in equal proportion. The other thermocouple is at a temperature T. If the output of the amplifier is 2.050V, the temperature T is
 - 205°C
 - 102.5°C
 - 51.25°C
 - 50°C
- A second order feedback system is found to be oscillating with a high frequency. The oscillations
 - Addressing mode of the instruction- ORL A, @ R0 is:
 - Direct
 - Indirect
 - Register
 - Immediate
 - Which type of programming is typically used for digital signal processors?
 - Assembly language
 - Machine language
 - C
 - None of the above
 - A phase lag compensation coil
 - Improves relative stability
 - Increases bandwidth
 - Increases overshoot
 - None of the above
 - Which one of the following is Programmable Interrupt Controller?
 - 8257
 - 8254
 - 8255
 - 8259
 - RTDs are typically connected with other fixed resistors
 - In a pi configuration
 - In a bridge configuration
 - And variable resistors
 - And capacitors in a filter-type

- A) Can be reduced by increasing the proportional action.
 B) Can be reduced by increasing the integral action.
 C) Can be reduced by increasing the derivative action.
 D) Cannot be reduced.
10. For a first order instrument a 5% settling time is equal to
 1. Three times the time constant.
 2. Two times the time constant.
 C) The time constant.
 D) Time required for the output signal to reaches 5% of the final value.

Sample Questions for

M.E. (Electronics and Communication Engineering) Regular Programme

- Which rectifier requires four diodes?
 A) half-wave voltage doubler
 B) full-wave voltage doubler
 C) full-wave bridge circuit
 D) voltage quadrupler
- If the input is a rectangular pulse, the output of an integrator is a
 A) Sine wave
 B) Square wave
 C) Ramp
 D) Rectangular pulse
- The energy gap in a semiconductor
 A) Increases with temperature
 B) Does not change with temperature
 C) Decreases with temperature
 D) Is zero
- The LASER diode sources require
 A) Spontaneous emission
 B) Absorption
 C) Stimulated emission
 D) None of the above
- 2's complement representation of a 16-bit number (one sign bit and 15 magnitude bits) is FFFF. Its magnitude in decimal representation is
 A) 0
 B) 1
 C) 32, 767
 D) 65, 565
- The Boolean function $Y=AB + CD$ is to be realized using only 2 input NAND gates. The minimum number of gates required is
 A) 2
 B) 3
 C) 4
 D) 5
- Which device is considered a current controlled device:
 A) Diode
 B) Field effect transistor
 C) Transistor
 D) Resistor
- In an amplifier, the emitter junction is
 A) Forward Biased
 B) Reverse Biased
 C) Grounded
 D) Shorted
- Unijunction Transistor has three terminals,
 A) Cathode, Anode, Gate
 B) Grid, Plate, Cathode
 C) Base 1, Base 2, Emitter
 D) Gate, Base 1, Base 2
- GSM stands for
 A) Global System for Mobile Communication
 B) Global System for Multiplexing
 C) Group System for Mobile Communication
 D) None of these

Sample Questions for

M.E. (Computer Science & Engineering) Regular Programme

- Which of the following is the name of the data structure in a compiler that is responsible for managing information about variables and their attributes?
 A) Abstract Syntax tree
 B) Symbol Table
 C) Variable value stack
 D) Parse tree

Sample Questions for

ME Civil Engineering (Construction Technology & Management) Regular Programme

- Q.1. Mass moment of inertia of a uniform thin rod of mass M and length (l) about its mid-point and perpendicular to its length is
(a) $\frac{2}{3} MI^2$ (b) $\frac{1}{3} MI^2$ (c) $\frac{3}{4} MI^2$ (d) $\frac{4}{3} MI$
- Q.2. The point of contraflexure is a point where
(a) Shear force changes sign (b) Bending moment changes sign
(c) Shear force is maximum (d) Bending moment is maximum
- Q.3. In order to avoid tendency of separation at throat in a venturimeter, the ratio of the diameter at throat to the diameter of pipe should be
(a) $\frac{1}{16}$ to $\frac{8}{8}$ (b) $\frac{1}{8}$ to $\frac{1}{4}$ (c) $\frac{1}{4}$ to $\frac{1}{3}$ (d) $\frac{1}{3}$ to $\frac{1}{2}$
- Q.4. The main cause of silting in channel is
(a) Non-regime section (b) Inadequate slope
(c) Defective head regulator (d) All of these
- Q.5. Weight of a vehicle affects
(a) Passing sight distance (b) Extra widening
(c) Pavement thickness (d) Width of lanes
- Q.6. The difference between maximum void ratio and minimum void ratio of a sand sample is 0.30. If the relative density of this sample is 66.6% at a void ratio of 0.40 then the void ratio of this sample at its loosest state will be
(a) 0.40 (b) 0.60 (c) 0.70 (d) 0.75
- Q.7. The diagonal tension in concrete can be resisted by providing
(a) Diagonal tension reinforcement (b) Shear reinforcement
(c) Inclined tension reinforcement (d) All these
- Q.8. Rivet value is equal to
(a) Strength of a rivet in shearing
(b) Strength of a rivet in bearing
(c) Minimum of the value obtained in (a) and (b)
(d) Maximum of the value obtained in (a) and (b)
- Q.9. Rise and fall method is used in
(a) Profile leveling (b) Differential leveling
(c) Check leveling (d) Non of these
- Q. 10. The alkaline salt present in the bricks, absorbs moisture from the air which on drying
(a) Leaves pores and makes the bricks porous
(b) Leaves high powder deposit on the brick
(c) Makes the brick brittle and weak
(d) All of these

Sample Questions for

ME Mechanical Engineering (Manufacturing Technology) Regular Programme

- Q.1. An inertial frame of reference has
(a) Fixed origin but directions of axes can change with time
(b) Fixed origin as well as fixed directions of its axes
(c) Fixed directions of axes but origin can change with time
(d) Any of the above

- Q.2. Dimensional formula for Young's modulus of elasticity is
- $ML^{-1}T^{-2}$
 - MLT^{-2}
 - $M^{-1}L^{-1}T^{-1}$
 - $ML^{-2}T^{-2}$
- Q.3. Which of the following processes would be best suited for stress relieving, improving machinability and ductility in casting and deep drawn components
- Austempering
 - Tempering
 - Normalising
 - Annealing
- Q.4. The pressure intensity at a point in a fluid is same in all directions, only when
- The fluid is frictionless
 - The fluid is frictionless and incompressible
 - The fluid has zero viscosity and is at rest
- Q.5. In orthogonal cutting, cutting face is inclined to the direction of cut at
- 90 degree
 - Less than 90 degree
 - Between 30 and 45 degrees
 - Greater than 90 degree
- Q.6. In statistical quality control $\pm 3\sigma$ means the percentage of items within acceptable limits will be:
- 68.26
 - 95.46
 - 99.73
 - 50
- Q.7. In the specification of fits
- Allowance is equal to twice the tolerance
 - Allowance is equal to half of tolerance
 - Allowance is independent of tolerance
 - Allowance is equal to the difference between maximum material limit mating parts.

Sample paper M.E. Electrical Engineering (Power System)

- Q.1** The maximum efficiency of a half-wave rectifier circuit can be
 (A). 37.2%
 (B). 40.6%
 (C). 53.9%
 (D). 81.2%
- Q.2** An overcurrent relay of current 5A and setting 150% is connected to the secondary of CT while CT ratio is 300:5. The current in the lines for which relay picks up is
 (A) 300 A
 (B) 450 A
 (C) 150 A
 (D) 200 A
- Q.3** A 100 mA meter has accuracy of $\pm 2\%$. Its accuracy while reading 50 mA will be
 (A) $\pm 1\%$
 (B) $\pm 2\%$
 (C) $\pm 4\%$
 (D) $\pm 20\%$
- Q.4** A 4-digit DVM(digital voltmeter) with a 100-mV lowest full scale range would have a sensitivity of how much value while resolution of this DVM is 0.0001
 (A). 0.1 mV
 (B). 0.01 mV
 (C). 1.0 mV
 (D). 10 mV
- Q.5** In a 4-bit weighted resistor D/A converter, the resistor value corresponding to LSB is 32 k Ω . The resistor value corresponding to MSB will be
 (A). 32 Ω
 (B). 16 Ω
 (C). 8 Ω
 (D). 4 Ω
- Q.6** For a two port linear passive bilateral network is
 (A). AD=BC
 (B). AD-BC=0
 (C). AD-BC=1
 (D). AB-BC=1
- Q.7** A distribution station has a peak load of 3000 kW and total annual energy of 10^7 kWh. The peak power loss is 220 kW. The loss factor is:
 (A). 0.215
 (B). 0.285
 (C). 0.325
 (D). 0.356
- Q.8** The load frequency response in a system
 (A). Does consider the reactive power flow
 (B). Does not consider the reactive power flow
 (C). Does not consider the real power flow
 (D). Consider Active power
- Q.9** For a synchronous phase modifier, the load angle is
 (A). 0°
 (B). 25°
 (C). 30°
 (D). 50°
- Q.10** A pilot exciter is:
 (A). A level compound small DC generator
 (B). A small servo type synchronous generator
 (C). A main synchronous generator
 (D). A main exciter

M.Tech Material Science (Entrance Test)

- Use of calculator is not allowed

- Q1. The order of magnitude of the energy gap of a typical semiconductor is
 a) 1MeV
 b) 1keV
 c) 1eV
 d) 1meV
- Q2. In Young's double slit experiment, the separation between the slits is halved and the distance between the slits and the screen is doubled. The fringe width is
 a) doubled
 b) halved
 c) quadrupled
 d) unchanged
- Q3. The material used to make permanent magnets should have
 a) Small coercivity and large retentivity.
 b) Large coercivity and large retentivity.
 c) Large coercivity and small retentivity
 d) Small coercivity and small retentivity
- Q4. Of the following moving with same velocity, the one with longest wavelength is
 a) an particle
 b) an electron
 c) a neutron
 d) a proton
- Q5. The Poynting vector signifies
 a) The flow of electric lines of force
 b) The flow of magnetic lines of force
 c) The flow of electromagnetic power
 d) Charge in the electrostatic field
- Q6. The crystal structure of solids can be determined experimentally by studying diffraction of
 a) X-rays
 b) Neutrons
 c) Electrons
 d) All of the above
- Q7. Enzyme-substrate kinetics can be studied via
 a) Stern Volmer plots
 b) DFT calculations
 c) Michaelis Menten Kinetics
 d) none of the above
- Q8. Surfactants are
 a) surface active agents
 b) surface enhancing agents
 c) surface deactivating agents
 d) all of the above
- Q9. CMC stands for
 a) chemical micellar concentration
 b) critical micellar concentration
 c) critical melting concentration
 d) chemical micellar concentration
- Q10. Which of the following is a cationic surfactant
 a) SDS
 b) AOT
 c) CTAB
 d) all of the above
- Q11. The region between the curve $y = \sqrt{x}$, $0 \leq x \leq 4$, and the x-axis is revolved about the x-axis to generate the solid. Find its volume.
 (a) 2π (b) 4π
 (c) 6π (d) 8π
- Q12. Find the value of $\sum_{n=1}^{\infty} \frac{2n^2 + 2n + 1}{n^3}$, if it exists.
 (a) 1/5
 (b) 5/6
 (c) 3/5
 (d) 0
- Q13. Find the value of $\lim_{x \rightarrow 0} \frac{x^2 + 2x + 1}{x^2 + 1}$.
 (a) 1
 (b) 2
 (c) 0
 (d) Does not exist.
- Q14. Find the flux of $\vec{F} = x\vec{i} - y\vec{j} + z\vec{k}$ across the circle $x^2 + y^2 = 1$ in the xy-plane.
 (a) 0
 (b) 1
 (c) π
 (d) $-\pi$
- Q15. Find the rank of the matrix A defined as

$$A = \begin{bmatrix} 3 & 2 & -1 \\ 4 & 2 & 6 \\ 7 & 4 & 5 \end{bmatrix}$$

 (a) 3
 (b) 1
 (c) 2
 (d) -1

Sample Questions for M.E. Biotechnology

1. Which of the following is not measure of central tendency.
 - a) Mean
 - b) Mode
 - c) Range
 - d) Median
2. Literature databases include.
 - a) MEDLINE and PubMed
 - b) MEDLINE and PDB
 - c) PubMed and PDB
 - d) MEDLINE and PDS
3. GenBank, the nucleic acid sequence database is maintained by
 - a) Brookhaven Laboratory
 - b) DNA database of Japan
 - c) European Molecular Biology Laboratory
 - d) National Centre for Biotechnology Information
4. Which of the following are similar between transcription in prokaryotes and eukaryotes
 - a) RNA polymerase products in mRNA which grows in 5' -3' direction
 - b) RNA polymerase bind to ribosomes to allow transcription
 - c) A poly-A tail is added to the 3' end of mRNAs
 - d) Introns are present in genes which are spliced out after transcription
5. Mitochondrial DNA is advantageous for evolutionary studies because:
 - a) It is inserted into the X chromosome
 - b) It is inherited only through female parent
 - c) It evolves more slowly than the genes in nucleus
 - d) It first appeared in humans and is not found in other animals
6. The lac operon in E coli is involved in
 - a) Regulating the expression of gene
 - b) Controlling DNA replication
 - c) Regulating the translation of mRNA
 - d) Controlling the formation of ribosome
7. Dimethyl sulfoxide (DMSO) is used as a cryopreservant for mammalian cell cultures because
 - a) It is organic solvent
 - b) It easily penetrates cells
 - c) It protects cells by preventing crystallization of water
 - d) It is also utilized as a nutrient
8. The helix content of a protein can be determined using
 - a) An infrared spectrometer
 - b) A fluorescence spectrometer
 - c) A circular dichroism spectrometer
 - d) A UV-Visible spectrophotometer
9. Frequency of a gene in a population will increase if the gene is
 - a) Lethal
 - b) Dominant
 - c) Recessive
 - d) Favorably selected

10. K_m is the substrate concentration at which

- a) The reaction rate is double of the maximum
 - b) The reaction rate is one half of the maximum
 - c) The enzyme is completely saturated with substrate
 - d) The enzymatic reaction stops
11. Which of the following is a sequence alignment tool

- a) BLAST
- b) PRINT
- c) PROSITE
- d) PIR

12. Amino acid residue which is most likely to be found in the interior of water-soluble globular proteins is

- a) Threonine
- b) Aspartic acid
- c) Valine
- d) Histidine

Sample Questions for Master of Arts(Business Economics) M. A.(BE)

1. Accounting is the language of .
 - A. Business
 - B. Books of Accounts
 - C. Accountant
 - D. None of these
2. Which of the following is not included under accounting concepts?
 - A) Money Measurement Concept
 - B) Business Entity Concept
 - C) Continuity Concept
 - D) None of these
3. Which expenses is of Capital Nature?
 - A) Depreciation
 - B) Wages
 - C) Salary
 - D) Stationary
4. Dividend can be declared from .
 - A) Revenue Profit
 - B) Capital Profit
 - C) Secret Reserve
 - D) All of these
5. Privatization is the result of .
 - A) Economic Compulsion
 - B) Social Compulsion
 - C) Global Compulsion
 - D) Market Compulsion
6. An agreement enforceable by law is called .
 - A) Voidable Contract
 - B) Void Agreement
 - C) Legal Agreement
 - D) Valid Contract
7. The Sale of Goods Act came into force from .
 - A) July 1, 1932
 - B) July 1, 1930
 - C) July 1, 1935
 - D) July 1, 1940
8. The value of the variable which occurs most frequently in a distribution is called .
 - A) Mode
 - B) Mean
 - C) Median
 - D) All of these
9. The arithmetic mean of a series is the figure obtained by dividing the sum of values all items by
 - A) 2
 - B) 3
 - C) 3
 - D) Their Number
10. Which of the following is Business Averages?
 - A) Moving average
 - B) Progressive average
 - C) Composite Average
 - D) All of these

Master of Entrepreneurship and Family Business (MEFB)

Part A: Verbal ability/Reasoning

1. Disease: Health:: Freedom : ?
 - A) Slavery
 - B) Pleasure
 - C) Plight
 - D) Beauty
2. If you are going to west in the afternoon, the sun will be visible at your left.

Part B: General Knowledge

1. In which organ of the human body would you find a cluster of cells which produce insulin?
 - A) Bile
 - B) Liver
 - C) Pancreas
 - D) Brain

- A) Never
B) Always
C) Sometimes
D) Often
3. Fill in the blank with the most suitable alternative. He shouted õ õ õ õ . at the subordinate.
A) Loud
B) Loudly
C) Loudely
D) Loudingly
2. Which area in India is the only breeding ground of the flamingo?
A) Rann of Kutch
B) North East
C) Himalayas
D) Bay of Bengal
3. Which was the first Capital of Pakistan?
A) Karachi
B) Lahore
C) Islamabad
D) Peshawar
4. Which Olympic did Milkha Singh break the world record in the 400 metres event.
A) Rome
B) Athens
C) Beijing
D) None of the above
5. Kuchipudi is a dance form of
A) Tamil Nadu
B) Orissa
C) Kerala
D) None of the above

Part C: Data Interpretation

According to the survey of 2000 educated unemployed persons in which 1200 were men and 800 were women, the following data were collected.

Qualification	Unemployed Men	Unemployed Women
Doctors	12.5%	15%
Engineers	20.0%	7.5%
Trained Teachers	15.0%	22.5%
Post-Graduates	22.5%	25.0%
Graduates	30.0%	30.0%

1. On the basis of above Table, what is the difference between the number of unemployed men and women doctors?
A) 20
B) 30
C) 40
D) None of the above
2. What is the total number of unemployed Graduates?
A) 425
B) 475
C) 550
D) 600
2. The value of the variable which occurs most frequently in a distribution is called
A) Mode
B) Mean
C) Median
D) All of these
3. The arithmetic mean of a series is the figure obtained by dividing the sum of values all items by
A) 2
B) 3
C) 5
D) Their Number
4. Which of the following is Business Averages?
A) Moving average
B) Progressive average
C) Composite Average
D) All of these

Part D: Commerce/ Economics

1. The sale of goods Act came into force from .
A) July 1, 1932
B) July 1, 1930
C) July 1, 1935
D) July 1, 1940

Sample Questions for M.Com. (Honours)

1. Which of the following presents key aspects of the process of accounting in the correct chronological order?
A) Communicating, recording and identifying
B) Recording, identifying and communicating
C) Recording, totaling and identifying
D) Identifying, recording and communicating
12. When an oligopolist individually chooses its level of production to maximize its profits, it charges a price that is
A) more than the price charges by either monopoly or a competitive market
B) less than the price charges by either monopoly or a competitive market
C) more than the price charges by a monopoly and less than the price charges by a competitive market
D) less than the price charges by a

2. Which of the following is not a function of controller?
 - A) Financial reporting
 - B) Managerial reporting
 - C) Money management
 - D) Cost management
3. Ending finished goods inventory is:
 - A) Beginning finished goods inventory + cost of goods completed . cost of goods sold
 - B) Cost of goods completed . cost of goods sold
 - C) Beginning finished goods inventory + cost of goods completed
 - D) Beginning finished goods inventory - cost of goods completed + cost of goods sold
4. Which of the following is also known as an inventoriable cost?
 - A) Period cost
 - B) Fixed cost
 - C) Product cost
 - D) Conversion cost
5. A cost management tool that brings in its focus the activities performed to produce a product is called
 - A) target costing
 - B) life cycle costing
 - C) ABC
 - D) benchmarking
6. The first Factories Act was enacted in
 - A) 1881
 - B) 1895
 - C) 1897
 - D) 1885
7. If the date of incorporation of a company is 1/01/2005, the first AGM must be held before
 - A) 30/06/2006
 - B) 31/03/2006
 - C) 31/12/2005
 - D) 31/03/2005
8. The right to information under the RTI Act, 2005 includes the right to
 - A) Inspect works, documents, records
 - B) Take notes, extracts or certified copies of documents or records
 - C) Obtain information in form of printouts, diskettes, floppies, tapes video cassettes or in any other electronic mode or through printouts
 - D) All of the above
9. Long term capital asset is an asset (other than financial securities) which is held by the assessee for more than
 - A) 36 months
 - B) 12 months
 - C) 24 months
 - D) 30 months
10. The definition of Goods under the Central Sales Tax Act, 1956 does not include
 - A) Newspapers
 - B) Standing crops
 - C) Computer software
 - D) Animals
11. A rational person does not act unless
 - A) the action is ethical
 - B) the action produces marginal costs
12. monopoly and more than the price charges by a competitive market
13. Suppose that the government increases its spending by 10 per cent and also increases taxes by 10 per cent. We would expect this policy to
 - A) Essentially have no effect on the level of national income
 - B) Have a contractionary effect on national income
 - C) Decrease the marginal propensity to save out of each extra pound of income
 - D) Have an expansionary effect on national income.
14. The Government of India has decided to cover all districts of the country in National Rural Employment Guarantee Programme (NREGP)
 - A) up to January 1, 2008
 - B) up to March 31, 2008
 - C) with effect from April 1, 2008
 - D) with effect from April 1, 2009
15. Reserve Bank of India calculates four components of money supply, M1, M2, M3, M4. Which one of the following statement is not correct?
 - A) M1 = currency with public + demand deposits with banks
 - B) M2 = M1 + post office savings deposit
 - C) M3 = M1 + M2
 - D) M4 = M3 + total post office deposits
16. What is meant by the term functional management?
 - A) A system of business organization that is based on an individual having a wide range of skills needed to administer a business
 - B) A type of management that is based more on personality
 - C) A system that groups together various jobs and is organized by departments, sections, or functions
 - D) A system that supports a flat form of command chain
17. Maslow, in his triangle of human needs, showed that
 - A) Having challenging new tasks is a basic human need
 - B) Money always motivates workers
 - C) Safety and security is a low order human need
 - D) Workers will not give of their best unless they have good social events provided by the firm
18. The purpose of the Malcolm Baldrige National Quality Award is to
 - A) Stimulate efforts to improve quality
 - B) Recognize quality achievements of companies
 - C) Publicize successful quality programs
 - D) All of the above
19. The process of collecting information about the external marketing environment

- that exceed marginal benefits
 C) the action produces marginal benefits that exceed marginal costs
 D) the action makes money for the person

- is
 A) Environmental management
 B) Environmental scanning
 C) Marketing management
 D) Marketing scanning

20. The correct components of the 7-S framework are
 A) Share values, synergy, systems, strategy, style, staff and structure
 B) Standards, strategy, style, staff skills, systems and security
 C) Structure, strategy, shared values, style, staff, skills and systems
 D) Strategy, synergy, shared value, standardization, skills staff and structure

Sample Questions for M.Com (Business Innovations)

Q1) India first took part in the Olympic games in the year

- A) 1920
 B) 1928
 C) 1972
 D) 1974

Q2) Where is the headquarters of the Oil and Natural Gas Corporation

- A) Mumbai
 B) Dehradun
 C) Vadodara
 D) Digboi

Q3) The working languages of the UNESCO is/are

- A) English only
 B) French only
 C) English and French
 D) English, French and Russian

Q4) After textiles, India's second important industry is:

- A) Sugar
 B) Jute
 C) Cement
 D) Iron and Steel

Q5) Vedanta group has been denied permission to start its activities in Niyamgiri Hills of Orissa. What activity was it pursuing?

- A) Steel Production
 B) Bauxite mining
 C) Gas exploration
 D) Timber cutting

Q6) Botany: Plants::Entomology:?

- A) Birds
 B) Plants
 C) Insects
 D) Snakes

Q7. 48:122::168:?

- A) 292
 B) 290
 C) 225
 D) 215

Q8) AKU:?:CMW:DNX

- A) BGL
 B) BLQ
 C) BGQ
 D) BLV

Q9) Flow: River::Stagnant: ?

- A. Pool
 B. Rain
 C. Stream
 D. Canal

Q 10) A rectangular floor is fully covered with square tiles of identical size. The tiles on the edges are white and tiles in the interior are red. The number of white tiles is the same as the number of red tiles. A possible value of the number of tiles along the edge of the floor is

- A. 10
 B. 12
 C. 14
 D. 16

Sample Questions for MBACIT

1 C. V. Raman won the Noble Prize for

3. Bioscience
 4. Chemistry
 5. Economics
 6. Physics

7. The value of the variable which occurs most frequently in a distribution is called .

- A) Mode
 B) Mean
 C) Median
 D) All of these

2 A.P.J. Abdul Kalam's autobiography is titled

- A) Ignited minds
- B) The Argumentative Indian
- C) The Alchemist
- D) Wings of Fire

3 SEZ Stands for

- A) Special economic zone
- B) Suez Canal
- C) Select enterprise zone
- D) Specific elite zone

4 A wheel makes 1000 revolutions in covering a distance of 88 Km. The diameter of the wheel is:

- A) 24 meter
- B) 40 meter
- C) 28 meter
- D) 14 meter

5 The difference between the ages of two persons is 10 years. 15 years ago, if the elder one was twice as old as the younger one, their present ages are

- A) 35, 25
- B) 45, 35
- C) 33, 23
- D) 30, 20

6 The sale of Goods Act came into force from .

- A) July 1, 1932
- B) July 1, 1930
- C) July 1, 1935
- D) July 1, 1940

8. The arithmetic mean of a series is the figure obtained by dividing the sum of values all items by

- E) 2
- F) 3
- G) 5
- H) Their Number

9. Which of the following is Business Averages?

- A) Moving average
- B) Progressive average
- C) Composite Average
- D) All of these

10. Which type of software is focused on supporting communication, collaboration and coordination?

- A) Groupware
- B) CRM software
- C) E-business software
- D) SCM software

11. When discussing email security, what is a Trojan Horse?

- A) A code hidden in another useful program, which has a destructive function of some sort
- B) The barrier or firewall through which all incoming email must pass.
- C) Small computer program snippets that are designed to do some harm on their host
- D) A destructive program that can spread itself automatically from one computer to the next within an email

Sample Questions for M.B.A. for Executives (MBAfEX)

Component 1: General Knowledge

1. In which organ of the human body would you find a cluster of cells which produce insulin?

- A) Bile
- B) Liver
- C) Pancreas
- D) Brain

2. Which area in India is the only breeding ground of the flamingo?

- A) Rann of Kutch
- B) North East
- C) Himalayas
- D) Bay of Bengal

3. Which was the first Capital of Pakistan?

- A) Karachi
- B) Lahore
- C) Islamabad
- D) Peshawar

4. Which Olympic did Mikha Singh break the world record in the 400 meters event?

- A) Rome
- B) Athens
- C) Beijing
- D) None of the above

5. Kuchipudi is a dance form of
- Tamil Nadu
 - Orissa
 - Kerala
 - None of the above

Component II: Economic and Business Environment Awareness

- A mixed economy is necessarily a _____ economy.
 - Controlled
 - Planned
 - Organised
 - None of the above
- Which of the following internal factors influence the strategy and other decisions of the business?
 - Value System
 - Mission and objective
 - Management structure and nature
 - None of the above
- Environment is synonymous with _____.
 - Task
 - Relations
 - People
 - Situational variables
- Which is the full form of NTC?
 - National Thermal Corporation
 - National Textile Corporation
 - Non-Textile Corporation
 - None of the above
- In which sector Indian Economy is growing at faster rate in 21st century (after 2000) _____.
 - Service
 - Agriculture
 - Manufacturing
 - Public

Component III: Data Interpretation and Problem Solving

According to the survey of 2000 educated unemployed persons in which 1200 were men and 800 were women, the following data were collected.

Qualification	Unemployed Men	Unemployed Women
Doctors	12.5%	15%
Engineers	20.0%	7.5%
Trained Teachers	15.0%	22.5%
Post-Graduates	22.5%	25.0%
Graduates	30.0%	30.0%

- On the basis of above Table, what is the difference between the number of unemployed men and women doctors?
 - 20
 - 30
 - 40
 - None of the above
- What is the total number of unemployed Graduates?
 - 425
 - 475
 - 550
 - 600
- What is the total number of Engineers?
 - 300
 - 350
 - 360
 - 400

4. In which category, unemployed men are more in percentage than unemployed women
- A) Doctors
 - B) Engineers
 - C) Post Graduates
 - D) Graduates

Component IV: Numerical Ability

1. How many pillars are needed to construct a bridge of 300 meters long, if pillars are at a distance of $12\frac{1}{2}$ meters each?
- A) 22
 - B) 24
 - C) 25
 - D) None of the above
2. If $5 \times 8 = 28$, $3 \times 7 = 12$, $8 \times 6 = 35$, then find the value of $13 \times 13 = ?$
- A) 169
 - B) 130
 - C) 140
 - D) 144
3. The ratio of boys and girls in a school is 3:2. 20% of boys and 25% of girls are scholarship holders. The percentage of students who are scholarship holders are:
- A) 45
 - B) 53
 - C) 60
 - D) 22
4. In a class M is 9th from the top, S is 8th from the bottom and R is exactly in between them. If there are three children between M and R, find out the total students
- A) 24
 - B) 25
 - C) 23
 - D) 27
5. 3, 5, 9, 17, 13, _____
- A) 44
 - B) 65
 - C) 64
 - D) 49

Component V: Verbal Ability and Reasoning

1. Disease : Health :: Freedom : ?
- A) Slavery
 - B) Pleasure
 - C) Plight
 - D) Beauty
2. If you are going to west in the afternoon, the sun will be visible at your left.
- A) Never
 - B) Always
 - C) Sometimes
 - D) Often
3. Fill in the blank with the most suitable alternative. He shouted _____ at the subordinate.
- A) Loud
 - B) Loudily
 - C) Loudely
 - D) Loudingly
4. J, F, M, A, M, ?
- A) M
 - B) J
 - C) D
 - D) S

5. In a military code CAUTION is coded as VACITNO. How will you uncode MISUNDERSTAND?
- A) SIMUNEDSRTAND
 - B) SIMNUEDSRATDN
 - C) SMIUNDERSTAND
 - D) None of the above

Component VI: English Comprehension

The most important reason for this state of affairs, perhaps, is that India was the only country in the world to truly recognize the achievements of the Soviet-Union-rather than merely focus on the de-bilitating faults that Communism brought to its people. The people of India realized that the achievement of one hundred per cent literacy in a country much, much larger than its own and with similarly complicated ethnic and religious groupings, the rapid industrialization of a nation that was a primarily agrarian society when the Bolshevik revolution took place in 1917; the attendant revolutionary steps in science and technology, the accessibility of health care (primeval according to Western standards, perhaps, but not according to India ones) to the general population, and despite prohibition of the government of the time the vast outpourings in literature, music, art, etc., are momentous and remarkable feats in any country.

In contrast, all that the West focused on were the massive human rights violations by the Soviet State on its people, the deliberate uprooting, and mass migrations of ethnic peoples from one part of the country to another in the name of industrialization, the end of religion in short, all the tools of information were employed to condemn the ideology of Communism, so much at variance with capitalist thinking.

The difference with the Indian perception, I think here is, that while the Indians reacted as negatively to what the Soviet governments did to its people in the name of good governance (witness the imprisonment of Boris Pasternak and the formation of an intentional committee to put pressure for his release with Jawaharlal Nehru at its head), they took the pain not to condemn the people of that broad country in black and white terms; they understood that mingled in the shades of gray were grains of uniqueness. (The Russians have never failed that characteristic in themselves; they have twice experimented with completely different ideologies, Communism and Capitalism both in the space of century).

- a. Which of the following statements according to the passage is correct?
 - (a) India took heed on the weak faults of Russian policies and system.
 - (b) India seriously commended the achievement of Russian, i.e. cent per cent literacy and rapid industrialization.
 - (c) The process of industrialization had already started when Russian revolution took place in 1917.
 - (d) The literature, art and music received a setback during the communist regime in Russia.
- b. The West did not focus on:
 - (a) Rapid growth of nuclear weapons in Russia
 - (b) Massive human rights violation by the Soviet state on its people.
 - (c) Deliberate uprooting and mass migration of ethnic people in the name of industrialization.
 - (d) Both (b) and (c)
- c. The Indian perception of the USSR was always
 - (a) Negative
 - (b) Neutral
 - (c) Counter . reactionary
 - (d) Applauding
- d. The passage is
 - (a) Descriptive
 - (b) Paradoxical
 - (c) Analytical
 - (d) Thought provoking

Sample Questions for M.P. Ed.

- India played hockey for the first time on Olympic Games in:
A) 1924, Paris (France)
B) 1928, Amsterdam
C) 1932, Los Angles (USA)
D) 1938, Berlin (Germany)
- A state of complete physical mental and social wellbeing and not merely the absence of disease or infirmity+. This statement which defines health is given by:
A) UNESCO B) UNICEF
C) WHO D) Red Cross
- Three of the following are alike in a certain way and so they form a group. Which is the one does not belong to the group?
A) Basketball
B) Volleyball
C) Hockey
D) Table Tennis
- The Sacrum consists of:
A) 3 Vertebraes
B) 4 Vertebraes
C) 5 Vertebraes
D) 7 Vertebraes
- The chief sources of vitamin A is:
A) Banana
B) Egg
C) Carrot
D) Guava
- What is the stick used in snooker called:
A) A Cue
B) Heave
C) Paddle
D) Togo
- Shivanthi Gold Cup+ is associated with the game of:
A) Hockey
B) Football
C) Volleyball
D) Badminton
- What is the normal life span of RBCs?
A) 60 days
B) 90 days
C) 120 days
D) 150 days
- Chronological age is calculated with the help of
A) Mental qualities
B) X-rays
C) Calendar years
D) Organs and secretions
- YMCA College of Physical Education (Madras) was established in:
A) 1956
B) 1920
C) 1931
D) 1932

Sample Questions for B.P. Ed.

- The Santosh Trophy tournament first began in:
A) 1940 B) 1941
C) 1942 D) 1945
- Who is the first teacher of a child?
A) Teacher
B) His Parents
C) His environment
D) His own conscious mind
- The first Modern Olympic games were held in the year:
A) 1892
B) 1896
C) 1900
D) 1904
- Find the odd personality:
A) Baichung Bhutia
B) Kapil Dev
C) Pete Sampras
D) Jarnail Singh
- Which of the following tournaments is not a part of Grand Slam Tennis?
A) Australian Open
B) Wimbledon
C) U.S. Open
D) German Open
- Which one of the following is different from the rest of the three?
A) Football
B) Basketball
C) Cricket
D) Tennis
- The name of Tiger Woodsq is associated with:
A) Boxing
B) Tennis
C) Football
D) Golf
- Thomas Cupq is associated with:
A) Badminton (women)
B) Badminton (men)
C) Table Tennis (women)
D) Table Tennis (men)
- Most important component of level of living is?
A) Health
B) Occupation
C) Education
D) Housing
- Vinay is taller than Manu, but not as tall as Yogesh, Karim is taller than Dillip but shorter than Manu, Who is the tallest among them?
A) Vinay
B) Yogesh
C) Karim
D) Manu

Sample Questions for M.Sc. (Hons. School) Biochemistry

- In mammals nor-epinephrine is synthesized from:
 - Pyruvate
 - Arginine
 - Catechol
 - Tyrosine
- Hyperglycemic agent secreted by the pancreas is:
 - Insulin
 - Lipase
 - Glucagon
 - FSH
- Feeding of raw egg may result in the deficiency of:
 - Vitamin A
 - Choline
 - Biotin
 - Riboflavin
- What role RNA plays in the replication of DNA:
 - It acts as template
 - It acts as primer
 - It acts as cofactor
 - It is essential activator of DNA polymerase
- Which of the following is not involved in antigen . antibody binding:
 - Hydrogen bonds
 - Ionic Bonds
 - Hydrophobic Interactions
 - Disulphide Bonds
- The movement of ions through ion channel can be measured with the help of:
 - Extra cellular electrode
 - Intra cellular electrode
 - Patch . clamp technique
 - Liposome fusion technique
- The synthesis of most neuronal proteins occurs in the:
 - Cell body
 - Axon
 - Synapses
 - Dendrites
- Which of the following amino acid does not form peptide bond:
 - Cysteine
 - Proline
 - Lysine
 - Glycine
- Lysozyme is an enzyme which:
 - Hydrolyses bacterial cell wall
 - Is made up of RNA
 - Contains phospholipids
 - Breaks lipoproteins
- Formation of uric acid from purines is catalysed by:
 - Urease
 - Uricase
 - Xanthine oxidase
 - Adenosine deaminase

Sample Questions for M.Sc. (Hons. School) Biophysics

1. If $\vec{A} + \vec{B} = \vec{0}$
 - A) Vector \vec{A} and \vec{B} are perpendicular to each other.
 - B) Vector \vec{A} and \vec{B} are necessarily parallel.
 - C) Vector \vec{A} and \vec{B} must be antiparallel.
 - D) Vector \vec{A} and \vec{B} may be parallel or antiparallel.
2. The minimum charge on a body can be:
 - A) one coulomb
 - B) one stat coulomb
 - C) 1.6×10^{-19} coulomb
 - D) 3.2×10^{-19} coulomb
3. The potential due to an electric dipole varies
 - A) inversely as the distance
 - B) directly as the distance
 - C) inversely as the square of distance
 - D) directly as the square of distance
4. Which of these techniques does not give information about the dimensions of DNA molecule?
 - A) Viscosity measurement
 - B) light scattering
 - C) flow-birefringence
 - D) Atomic Absorption spectroscopy
5. Fluorescence of a protein can be due to
 - A) tryptophan
 - B) tyrosine
 - C) phenylalanine
 - D) all the above
6. The aromatic amino acids are important because:
 - A) they are ionized by light of wavelength 280nm.
 - B) they are actually imino acids that cannot rotate through the angle ϕ .
 - C) they give proteins their absorbance at 280 nm
 - D) they are source of disulfide bonds within the exported proteins
7. The Henderson-Hasselbalch equation states that:
 - A) $p^k = p^H + \log R$
 - B) $p^H = p^k + \log R$
 - C) $p^H = p^k \cdot \log R$
 - D) $R = p^k - p^H$
8. The proteins that run the fastest in SDS-PAGE are
 - A) Large
 - B) Small
 - C) Negatively charged
 - D) Positively charged
9. The angle between the \vec{a} , \vec{b} , \vec{c} axes is 90° . Describe the unit cell
 - A) tetragonal
 - B) orthorhombic
 - C) monoclinic
 - D) trigonal
10. The electromagnetic radiation with longest wavelength is:
 - A) Visible Light
 - B) Radiowaves
 - C) Microwaves
 - D) IR
12. Mass spectrometry is an analytical technique for the identification of molecules by way of measuring their:
 - A) mass only
 - B) charge only
 - C) mass to charge ratio
 - D) charge to mass ratio
13. Micro array analysis is used for
 - A) quantization of gene expression
 - B) to check the quality of gene expression
 - C) for measuring the copy number
 - D) to identify new genes
14. Component of atom involved in study of structure with X-ray crystallography
 - A) Nucleus
 - B) Electron
 - C) proton
 - D) Neutrons
15. The radius of an atom is approximately
 - A) 10^{-10} m
 - B) 10^{-12} m
 - C) 10^{-13} m
 - D) 10^{-16} m
16. Rays similar to x-rays but of smaller wavelength that are given off by radioactive substances are
 - A) alpha rays
 - B) beta rays
 - C) gamma rays
 - D) cosmic rays
17. Antiparticle of electron is
 - A) proton
 - B) Antiproton
 - C) Positron
 - D) Neutron
18. Atomic force microscope was invented in which year:
 - A) 1972
 - B) 1986
 - C) 2001
 - D) 1980
19. Nucleic acid absorption (A_{260}) changes in different states. It is maximum when it is:
 - A) Double stranded
 - B) Single stranded
 - C) All nucleotides are separated
 - D) Fragmented
20. Which out of these is not a connective tissue:
 - A) Cartilage
 - B) bone
 - C) muscle
 - D) blood
21. Which of these is not a characteristic of the Cardiac muscle:
 - A) nonstriated
 - B) Presence of intercalated disc
 - C) Involuntary
 - D) Presence of actin and myosin filaments.
22. Fertilization occurs in which region of female reproductive part:
 - A) Infundibulum
 - B) ampulla
 - C) Isthmus
 - D) Uterus

11. Of the following which has got the highest frequency?
 - A) ultraviolet rays
 - B) gamma rays
 - C) radio waves
 - D) infrared waves
23. Brunner glands are present in:
 - A) Colon
 - B) jejunum
 - C) duodenum
 - D) ileum

Sample Questions for M.Sc. (Hons. School) in Computer Science

1. Who is original developer of Linux, the free UNIX clone on the PC?
 - A) Bill Gates
 - B) Linus Torvalds
 - C) Dennis Ritchie
 - D) Richard Stallman
2. In the context of Open Source technologies, what is the meaning of OSI and FSF acronyms/abbreviations?
 - A) Open System Interconnection and Flight Safety Foundation
 - B) Open System Interchange and Flight Safety Foundation
 - C) Open Source Initiative and Free Software Foundation
 - D) Open Source Instrument and Financial Stability Forum
3. The binary equivalent of the decimal number 0.4375 is
 - A) 0.0111
 - B) 0.1011
 - C) 0.1100
 - D) 0.1010
4. Which of the following logic families is well suited for high speed operation?
 - A) TTL
 - B) ECL
 - C) MOS
 - D) CMOS
5. Computer Network Topology is the physical layout of a LAN. The network topology with the highest reliability is
 - A) Bus topology
 - B) Star topology
 - C) Ring topology
 - D) Mesh topology
6. The extent to which the software can continue to operate correctly despite the introduction of invalid input is called
 - A) Reliability
 - B) Robustness
 - C) Fault-tolerance
 - D) Portability
7. In Java, the constants that cannot be changed are declared using the keyword
 - A) Final
 - B) Static
 - C) Abstract
 - D) Immutable
8. A machine took 200 seconds to sort 200 names, using bubble sort. In 800 seconds it can approximately sort
 - A) 400 names
 - B) 800 names
 - C) 750 names
 - D) 600 names
9. Which of the following memories must be refreshed many times per second?
 - A) Dynamic RAM
 - B) EPROM
 - C) Static RAM
 - D) ROM
10. In 1964, Douglas Engelbart demonstrated the world's first:
 - A) Mouse
 - B) Tape Drive
 - C) Vacuum Tube
 - D) Solid State Memory

Sample Questions for M.Sc. (Hons. School) Mathematics

- Let G be a group of order 147. For any $a \in G$, $a \neq e$, the number of solutions of $x^2 = a$ is
 - 49
 - one
 - three
 - zero
- In the ring $Z[i]$, where Z is the ring of integers, the element $1 - i$
 - is both irreducible as well as prime
 - is neither irreducible nor prime
 - is irreducible but not prime
 - is prime but not irreducible
- The equation of the tangent to the curve $f(x, y) = 0$ at any point (a, b) is given by
 - $(x - a) \frac{\partial f}{\partial y}(a, b) + (y - b) \frac{\partial f}{\partial x}(a, b) = 0$
 - $(x - a) \frac{\partial f}{\partial y}(a, b) - (y - b) \frac{\partial f}{\partial x}(a, b) = 0$
 - $(y - b) \frac{\partial f}{\partial y}(a, b) + (x - a) \frac{\partial f}{\partial x}(a, b) = 0$
 - $(x - a) \frac{\partial f}{\partial x}(a, b) - (y - b) \frac{\partial f}{\partial y}(a, b) = 0$
- Two spheres

$$x^2 + y^2 + z^2 + 2u_1x + 2v_1y + 2w_1z + d_1 = 0$$

$$x^2 + y^2 + z^2 + 2u_2x + 2v_2y + 2w_2z + d_2 = 0$$
 cut each other orthogonally if
 - $2u_1u_2 + 2v_1v_2 + 2w_1w_2 = d_1 + d_2$
 - $u_1u_2 + v_1v_2 + w_1w_2 = 0$
 - $\frac{u_1}{u_2} = \frac{v_1}{v_2} = \frac{w_1}{w_2} = \frac{d_1}{d_2}$
 - $2(u_1 - u_2) + 2(v_1 - v_2) + 2(w_1 - w_2) = (d_1 - d_2)$
- The series $\sum \frac{1}{n(\log n)^p}$ is
 - convergent if $p > 0$
 - convergent if $p > 1$
 - divergent if $p > 1$
 - convergent if $0 < p < 1$
- The integrating factor of the differential $\frac{\partial y}{\partial x} + 2xy = 4x^3$ is
 - e^{y^2}
 - e^{x^2}
 - e^x
 - e^y
- If $\phi(x_1, y_1, z_1) = 3x^2y - y^3z^2$, then $\nabla \phi$ at the point $(1, -2, 1)$ is
 - $-12\hat{i} - 9\hat{j} - 16\hat{k}$
 - $12\hat{i} + 9\hat{j} - 16\hat{k}$
 - $-12\hat{i} + 9\hat{j} + 16\hat{k}$
 - $-12\hat{i} + 9\hat{j} - 16\hat{k}$
- If one root of the equation $x^3 - 13x^2 + 15x + 189 = 0$ exceeds the other by 2, then all the roots are
 - 7, 9 and 3
 - 7, -9 and -3
 - 7, 9 and .3
 - 7, -9 and 3
- Two forces 13 kg.wt. and $3\sqrt{3}$ kg.wt. act on a particle at an angle θ and equal to a resultant force of 14 kg.wt., then the angle between the forces is
 - 45°
 - 30°
 - 60°
 - 90°
- Let W_1 and W_2 be subspaces of dimensions 5 and 4 respectively of a vector space V of dimension 6. Then $\dim(W_1 \cap W_2)$ is
 - Zero
 - one
 - at most two
 - at least three

Sample Questions for M.Sc. 2-Year Course Bioinformatics/ System Biology and Bioinformatics

- Which are the repositories for raw sequence data
A) Gen Bank
B) EMBL
C) DDBJ
D) GGPP
- Which of the following annotation is not provided by SWISS-PROT
A) Protein function
B) Domain structure
C) Post translation modification
D) Crystal formations
- Which is the most important computer language used in Bioinformatics
A) Pascal
B) Perl
C) Java
D) C++
- Which type of analysis cannot be performed on *raw DNA sequence* using Bioinformatics tools
A) Identifying coding regions
B) Identification of introns and exons
C) Gene product prediction
D) Identifying *cis* and *trans* regions
- OMIM is engaged in study of
A) Human molecular Biology
B) Plant molecular biology
C) Bacterial molecular biology
D) Yeast Molecular biology
- Which of the following sequence is correct:
A) DNA, RNA, Protein
B) DNA, Protein, RNA
C) RNA, DNA, Protein
D) Protein, DNA, RNA
- Which is not the method of protein/DNA sequence alignment
A) Matrix
B) Brute force
C) Dynamic programming
D) Heuristic methods
- The method not used in NSA programming is
A) Sum of pairs methods
B) Sparse alignment
C) Two step method
D) Fitch/Margoliosh method
- Distance matrix method are used for
A) Carbohydrate structure prediction
B) Proteins structure prediction
C) Phylogenetic analysis
D) Primer design
- FASTA-BLAST, WU-BLAST are programmes used for determining
A) Sequence similarity of Protein only
B) Sequence similarity of DNA only
C) Sequence similarity of Carbohydrate only
D) Sequence similarity of Protein and DNA

Sample Questions for M.Sc. (Environment)

- A thin copper wire of length one metre increases in length by 4% when heated by 10°C. What will be the per cent increase in area when a square copper sheet of side one metre is heated by 10°C?
A) 4%
B) 8%
C) 16%
D) 24%
- If the unit of length and force are increased by 4 times, the unit of energy gets increased by how many times?
A) 4 times
B) 8 times
C) 16 times
D) does not change
- The scientific principle involved in radio and television is:
A) Superconductivity
B) Semiconductography
C) Propagation of e.m. waves
D) Electromagnetic induction
- A passenger in a moving train tosses a coin. If it falls behind him, the train must be moving with
A) An acceleration
B) A deceleration
- Which of the following is a deadly nerve gas developed during the second world war?
A) Nitric oxide
B) Phosgene
C) Sarine
D) Dioxin
- The natural rubber obtained from trees is made of:
A) Isoprene units
B) Vinyl chloride
C) Acetylene
D) Neoprene
- Which of the following is differentially permeable?
A) Cell wall
B) Tonoplast
C) Nuclear membrane
D) Cytoplasm
- Which of the following prevents leaf shedding in plant?
A) Auxins
B) Gibberellins
C) Cytokinins
D) Absciscic acid
- Sugar in chloroplast is synthesized in:
A) Quantasomes

- C) Uniform speed
D) It can never happen
5. Zero error of an instrument introduces:
A) Systematic error
B) Random error
C) Per cent error
D) Means no error
6. The Science of surveying and mapping the earth's surface is known as:
A) Cartography
B) Geodesy
C) Topography
D) Scienodsy
7. The gravitational force with which a body is attracted towards the earth is
A) Maximum at the equator and minimum at the poles
B) Minimum at the equator and maximum at the poles
C) The same at the equator and the poles
D) Depends on the altitude at the given point
8. Which of the following is used as an antiseptic?
A) Iodine
B) Bromine
C) Chlorine
D) Fluorine
9. Washing soaps produces a scum with hard water and not much of foam, because the hard water contains:
A) Many suspended particles
B) Many dissolved inorganic salts
C) Chalk and sulphur
D) Dissolved organic matter
- B) Stroma
C) Thylakoids
D) Matrix
15. The structure of protoplasm is:
A) Granular
B) Fibrillar
C) Reticular
D) Colloidal Matrix
16. Which of the following could be cancer of the lymph nodes and spleen?
A) Carcinoma
B) Sarcoma
C) Leukemia
D) Lymphoma
17. The major component of Bacterial cell wall is
A) Xylan
B) Chitin
C) Peptidoglycan
D) Cellulose
18. How many bones does the Cranium of man have?
A) 8 B) 12
C) 16 D) 20
19. When is the world Population day celebrated?
A) August 3
B) April 16
C) October 18
D) July 11
20. In a Nuclear Reactor the heavy water is used to :
A) cool the neutrons
B) slow down the neutrons
C) absorb the neutrons
D) control the number of neutrons

Sample Questions for M.Sc. (Human Genomics)

1. Which one of the following is an essential component of DNA?
A) Protein
B) Carbohydrate
C) Lipids
D) Vitamins
2. Three types of RNA involved in comprising the structural and functional core for protein synthesis, serving as a template for translation, and transporting amino acid, respectively, are:
A) mRNA, tRNA, rRNA
B) rRNA, tRNA, mRNA
C) tRNA, mRNA, rRNA
D) rRNA, mRNA, tRNA
3. A synthetic mRNA of repeating sequence 5'-CACACACACACACAC... is used for a cell-free protein synthesizing system like the one used by Nuremberg. If we assume that protein synthesis can begin without the need for an initiator codon, what product or products would you expect to occur after protein synthesis.
A) One protein consisting of a single amino acid
B) Three proteins, each consisting of a different, single amino acid
5. Signaling between cells usually results in the activation of protein
A) lipase
B) kinases
C) proteases
D) nuclease
6. Highly repetitive DNA has
A) a very short repeating sequence and no coding function
B) a moderate repeating sequence and a coding for house keeping gene
C) a simple repeat sequence and no coding function
D) None of the above
7. From which grandparent or grandparents did you inherit your mitochondria? Is it your:
A) mother's parents
B) paternal grandfather
C) grand mothers
D) maternal grandmother
8. What are the possible blood types of the offspring of a cross between individuals that are type AB and type O? (Hint: blood type O is recessive)

- C) One protein, with an alternating sequence of two different amino acids
 - D) Two proteins, each with an alternating sequence of two different amino acids.
4. A replicon is:
- A) an enzyme complex that replicates DNA
 - B) the amount of time required to duplicate a genome
 - C) larger in complex eukaryotes and smaller in bacteria
 - D) the DNA sequences that specify and are replicated by a single replication initiation event
- A) AB or O
 - B) A, B, or O
 - C) A or B
 - D) A, B, AB, or O
9. A woman with an X-linked dominant disorder mates with a phenotypically normal male. On average, what proportion of this couple's daughters will be affected with the disorder?
- A) 0.5
 - B) 1.0
 - C) 0.75
 - D) 0.25
10. A messenger acid is 336 nucleotides long, including the initiator and termination codons. The number of amino acids in the protein translated from this mRNA is:
- A) 999
 - B) 630
 - C) 330
 - D) 111

Sample Questions for M.Sc. in Nuclear Medicine

1. We can produce colors with white light through:
A) Interference
B) Polarization
C) Diffraction
D) Dispersion
2. Methods of Fourier Transformation are applied in
A) Nuclear Magnetic Resonance
B) X-ray crystallography
C) Medical Imaging
D) All of the above
3. Which one of the following is correctly matched?
A) Chloroplast . storage of enzymes
B) Lysosome . powerhouse of cell
C) Nucleolus . site of ribosomal synthesis
D) Glyoxysome . structural support of cell
4. Which amino acid can stabilize protein structure by forming covalent cross links between polypeptide chains?
A) Ser
B) Gly
C) Glu
D) Cys
5. In CT imaging the phenomenon used is
A) Radiation absorption
B) Radiation damage
C) Free radical formation
D) Radiation fluorescence
6. Macrophage . like cells in the connective tissue are
A) Osteoclasts
B) Mesangial cells
C) Histiocytes
D) Microglial cells
7. Zinc finger proteins and helix-turn-helix proteins are:
A) Types of DNA-binding proteins
B) Involved in the control of translation
C) Components of ribosomes
D) Part of the hemoglobin in blood cells
8. Transcription of DNA into mRNA is catalyzed by
A) DNA polymerase
B) RNA synthetase
C) RNA polymerase
D) Rnase
9. Which nitrogenous bases is NOT found in DNA?
A) Thymine
B) Uracil
C) Adenine
D) guanine
10. How would the complementary strand of DNA appear if the original strand of DNA contained the bases T-A-G-C in the order?
A) U-A-C-G
B) G-C-A-T
C) T-A-C-G
D) A-T-C-G

Sample Question for M.Sc. (2-Year Course) Microbial Biotechnology

1. Which of the following microbes is the biological indicator for autoclaving?
 - a. *Bacillus stearothermophilus*
 - b. *Coxiella burnetii*
 - c. *Mycobacterium tuberculosis*
 - d. *Bacillus subtilis*
2. Which is the first free living organism whose complete genome was sequenced?
 - a. *Haemophilus influenzae*
 - b. *Escherichia coli*
 - c. *Saccharomyces cerevisiae*
 - d. *Staphylococcus aureus*
3. Which one of the following processes refers to removal of only pathogenic organisms from an animate surface?
 - a. Disinfection
 - b. Antisepsis
 - c. Tyndallization
 - d. Insipitation
4. Which of the following genetic processes involves uptake of naked DNA?
 - a. Conjugation
 - b. Transduction
 - c. Transformation
 - d. All the above
5. In the double helix model of DNA, how far is each base pair from the next one?
 - a. 0.034 nm
 - b. 0.34 nm
 - c. 34 nm
 - d. 3.4 nm
6. Gelling properties of agarose are due to
 - a. Covalent bonds
 - b. Ionic bonds
 - c. Hydrogen bonds
 - d. Both a and b
7. Which pair of amino acids absorbs the most UV light at 290 nm?
 - a. Threonine and Histidine
 - b. Tryptophan and tyrosine
 - c. Cysteine and Asparagine
 - d. Alanine and Proline
8. Which of the following is a lambda phage derived cloning vector?
 - a. pYAC
 - b. EMBL3
 - c. M13mp8
 - d. pBR322
9. Amongst the different antibody classes, which of the following do not harbor Hinge region?
 - a. IgG, IgD and IgA
 - b. IgA and IgD
 - c. IgM and IgE
 - d. IgM and IgA
10. Which microbe is involved in the production of tempeh, a soyabean product?
 - a. *Rhizopus*
 - b. *Aspergillus*
 - c. *Escherichia coli*
 - d. *Saccharomyces cerevisiae*

Sample Questions for M.Sc. in Biotechnology

1. Correct sequence of stages in cell cycle is
 - A) G1, S, G2, M
 - B) S, G2, M, G1
 - C) G1, G2, M, S
 - D) G1, G2, S, M
2. Which of the following does not contain both DNA and RNA?
 - A) Yeast
 - B) Bacteria
 - C) Mycoplasma
 - D) Virus
3. Which of the following is not an antibacterial antibiotic
 - A) Tetracyclin
 - B) Ampicillin
 - C) Nystatin
 - D) Nalidixic acid
4. The development of egg without fertilization is called
 - A) Blastogenesis
 - B) Parthenogenesis
 - C) Cogenesis
 - D) Gametogenesis
 - E)
5. TATA box and Pribnow box are components of
 - A) Operators
 - B) Promoters
 - C) Enhancers
 - D) Activators
6. Peptide chain elongation involves all the following except
 - A) peptidyl transferase
 - B) GTP
 - C) Tu, Ts and G factors
 - D) Formyl tRNA
7. The smallest unit of DNA capable of coding for the synthesis of a polypeptide is the
 - A) Operon
 - B) cistron
 - C) promoter
 - D) replicon
8. Exonuclease is an enzyme, which cleaves DNA from
 - A) 3' end
 - B) 5' end
 - C) both 3' and 5' end
 - D) internal bonds in DNA
9. Which of the following is not part of the *lac* operon of *E. coli*?
 - A) genes for inducible enzymes of lactose metabolism
 - B) genes for the repressor, a regulatory protein
 - C) gene for RNA polymerase
 - D) a promoter, the RNA polymerase binding site
10. Which of the following primers would allow copying of the single-stranded DNA sequence 5' ATGCCTAGGTC?
 - A) 5' ATGCC,
 - B) 5' TACGG
 - C) 5' CTGGA
 - D) 5' GACCT

Sample Questions for M.Sc. (Hons. School) Botany

- In C_4 plants the first CO_2 acceptor is :
A) Ribulose . 1,5-bisphosphate
B) Phosphoenol pyruvate
C) Pyruvate
D) Ribulose-5-phosphate
- In majority of angiosperms, the female gametophyte at the time of fertilization is :
A) 8-celled
B) 7-celled
C) 6-celled
D) 4-celled
- Agar-agar is extracted from which of the following genera
A) *Gracilaria*
B) *Dictyota*
C) *Ectocarpus*
D) *Laminaria*
- Black rust of wheat is caused by :
A) *Ustilago tritici*
B) *Puccinia graminis tritici*
C) *Protomyces macrosporus*
D) *Albugo candida*
- Oomycota is a phylum in kingdom:
A) Fungi
B) Chromista
C) Protozoa
D) Mycota
- Cystidium is a
A) Sterile element occurring in the hymenium of certain Basidiomycetes
B) Reproductive organ of a green alga
C) Fertile part of lichen thallus
D) Asexual spore
- Most bryophytes are autotrophic but a few are more or less saprophytic. Which of the following is totally devoid of chlorophyll and depends upon a mycorrhizal association for its growth and development?
A) *Cyptothallus mirabilis*
B) *Funaria hygromitrica*
C) *Concephalum conium*
D) *Pellia epiphylla*
- Somaclonal variations are:
A) Variations produced during tissue culture
B) Variations produced during sexual reproduction
C) Variations caused by mutagenic chemicals
D) Variations caused by Gamma rays
- Trisomic condition is expressed as
A) $2n-1$
B) $2n-2$
C) $2n+1$
D) $2n+2$
- The functional unit in ecology is the:
A) Organism
B) Biosphere
C) Ecosystem
D) Population

Sample Questions for M.Sc. (Hons. School) 2-Year Course Chemistry

- Anti-Markonikoff cis-hydration of an alkene can be achieved by using
A) Catalytic hydrogenation
B) $Li / liq. NH_3$ reduction
C) Alkaline $KMnO_4$ solution
D) Hydroboration-oxidation
- Beckmann rearrangement converts an oxime into
A) an amine
B) carbamate
C) a substituted hydrazine
D) an amide
- The configuration of the following stereoisomer

$$\begin{array}{c}
 CH_3 \\
 | \\
 H - C - Cl \\
 | \\
 Cl - C - H \\
 | \\
 CH_2CH_3
 \end{array}$$

A) 2R, 3R
B) 2S, 3R
C) 2R, 3S
D) 2S, 3S
- Which of the following is expected to have least paramagnetic character?
A) $[Co(NH_3)_6]^{3+}$
B) $[Fe(H_2O)_6]^{3+}$
- 1g ice absorbs 335 J of heat to melt at $0^\circ C$. The entropy change will be
A) $1.2 JK^{-1}mol^{-1}$
B) $335 JK^{-1}mol^{-1}$
C) $22.1 JK^{-1}mol^{-1}$
D) $0.8 JK^{-1}mol^{-1}$
- Two moles of HI were heated in a sealed tube at $440^\circ C$ till the equilibrium was reached. HI was found to be 22 % dissociated. The equilibrium constant for dissociation is
A) 0.282
B) 0.0796
C) 0.0199
D) 1.99
- During biological nitrogen fixation, nitrifying bacteria convert
A) NO_3 to NH_4
B) N_2 to NH_4
C) NH_4 to NO_3
D) NO_3 to N_2
- Which of the following state is stable for p^2 configuration?
A) 1D_2
B) 3P_2
C) 1S_0
D) 3P_0
- Which of the following has lowest CO stretching frequency?
A) $Ni(CO)_4$

- C) $[\text{Cr}(\text{CN})_6]^{3-}$
 D) $[\text{CoF}_6]^{3-}$
5. The freezing point of 0.1M solution of glucose is -1.86°C . If an equal volume of 0.3 M glucose is added, the freezing point of the mixture will be
 A) -7.44°C
 B) -5.58°C
 C) -3.27°C
 D) -2.79°C
- B) $\text{Cr}(\text{CO})_6$
 C) $[\text{Fe}(\text{CO})_4]^{2-}$
 D) $[\text{Mn}(\text{CO})_6]^+$

Sample Questions for M.Sc. (Hons. School) Physics/ Physics & Electronics/ Medical Physics

- Two electrons move in opposite directions at $0.70c$ as measured in the laboratory. The speed of one electron as measured from the other is:-
 A) $0.35c$
 B) $0.70c$
 C) $0.94c$
 D) $1.00c$
- Which one of the following transformations is second order phase transition?
 A) Ferromagnetic state to the paramagnetic state
 B) Melting of ice
 C) Evaporation of materials
 D) Solidification of materials.
- For which one of the following signal we require an amplifier with minimum bandwidth:
 A) Sine wave
 B) Square wave
 C) Triangular wave
 D) Saw tooth wave
- Two of Maxwell's equations contain an integral over a closed surface. For them the infinitesimal vector area $d\mathbf{A}$ is always:
 A) Tangent to the surface
 B) Tangent to the field line
 C) Perpendicular to the surface and pointing inward.
 D) Perpendicular to the surface and pointing outward.
- For the domestic ac supply of 220V, the breakdown voltage of a diode should be:
 A) 130V
 B) 163V
 C) 220V
 D) 330V
- When the gate voltage becomes more negative in n-channel JFET, the channel between depletion layers:
 A) Shrinks
 B) Expands
 C) Conducts
 D) Stops conducting
- Space quantization means that:
 A) Space is quantized
 B) L and U are in the same direction.
 C) L_z can have discrete values.
 D) An electron has magnetic dipole moment.
- The electron density of states for a metal depends primarily on:
 A) The temperature
 B) The energy associated with the state
 C) The size of the sample.
 D) The mass of the sample.
- Some alpha emitters have longer half-lives than others because:
 A) Their alpha particles have greater mass.
 B) Their alpha particles have less mass
 C) Their potential barriers to decay are higher and wider
 D) Their decays include the emission of photons.
- In an alpha decay the disintegration energy appears mainly as
 A) Photon energies
 B) The kinetic energies of the alpha and the daughter nucleus
 C) The excitation energy of the daughter nucleus
 D) heat

Sample Questions for M.Sc. (Hons. School/ 2-Year Course) Zoology

1. The organelle which is common in the Prokaryotes and Eukaryotes is
 - A) Nuclear wall
 - B) Golgi body
 - C) Ribosome
 - D) Mitochondria
2. In the Human genome project which country was not involved
 - A) France
 - B) India
 - C) USA
 - D) UK
3. The best animal for the study of Developmental Biology experiments is
 - A) Fish
 - B) Pigeon
 - C) Turtle
 - D) *Caenorhabditis*
4. Only one of the following is to be considered as an Anamniote
 - A) Amphibia
 - B) Reptiles
 - C) Aves
 - D) Mammals
5. In the neck of any mammal the number of vertebrae found are always
 - A) 5
 - B) 6
 - C) 7
 - D) 4
6. Detection of antibody in ELISA involves
 - A) Antigen + 1st antibody + substrate
 - B) Antigen + 1st antibody tagged with HRP
 - C) Antigen + 1st antibody + 2nd antibody tagged with HRP
 - D) Antigen + 1st antibody + 2nd antibody tagged with HRP + substrate
7. Raptorial feet are present in
 - A) Fowls, Pheasants, Quails
 - B) Sparrows, Robins, Crows
 - C) Herons, Snipes, Jacanas
 - D) Vultures, Eagles, Owls
8. _____ fin is the most primitive of caudal fins
 - A) Iso cercal
 - B) Homo cercal
 - C) Proto cercal
 - D) Gephyro cercal
9. The classification of Reptiles is based on
 - A) Limbs
 - B) Teeth
 - C) Feeding habits
 - D) Temporal vacuities
10. Limbs and girdles are missing in
 - A) Anurans
 - B) Caecilians
 - C) Apoda
 - D) Chelonian
11. *Paramecium caudatum* has
 - A) Single Nucleus
 - B) Two similar nuclei
 - C) Two dissimilar nuclei
 - D) Many nuclei

Important Dates and Information for Entrance Test PU-CET (P.G.) - 2016

Date of Advertisement regarding test & other information relevant thereto	30.3.2016 (Wednesday)
Date of Availability of PU . CET (P.G.) Prospectus and Application Form on the website of Panjab University	30.3.2016 (Wednesday)
Last date for submission of information on the website to generate the Bank Challan	10.5.2016 (Tuesday)
Last date for deposit of fee in any branch of State Bank of India using website generated challan	13.5.2016 (Friday) upto 4:00 p.m.
Last date for uploading of photograph, signature with rest of the information on the website	16.5.2016 (Monday)
No correction will be entertained / made regarding photograph, signature and any other information for (completed forms only) after 19.5.2016 upto 5:00 p.m.	19.5.2016 (Thursday) upto 5:00 p.m.
<u>Final date by which Roll No. will be available online</u> Admit Card required to be downloaded from the website by the candidate using their own Login and Password (provided while generating Bank Challan). <u>There will be no physical communication for this purpose.</u>	30.5.2016 (Monday)
Dates of holding Entrance Test	11.06.2016 to 12.06.2016 (Saturday to Sunday)
Tentative date during which the result may be declared by the University	04-07-2016 to 11-07-2016 (Monday to Monday)
PU-CET (P.G.) Course Fee General Category SC/ST/Blind Category Additional Form (for both General and SC/ST / Blind Category)	Rs. 1760/- Rs. 880/- Rs. 770/-
50% concession for Panjab University regular employees under B & C Class (Senate dated 14.7.2007 vide para No. xxxiii)	

DATE SHEET PU-CET (P.G.) 2016

Date and Day of Test	Course	Time of Examination
11-06-2016 (Saturday)	M.Sc. (Chemistry) (Hons. School/ 2 Yr. Course)	8.30 a.m. to 10.00 a.m.
	M.Com. (Hons.)	8.30 a.m. to 10.00 a.m.
	M.Sc. (2 Yr. Course) Microbial Biotechnology	8.30 a.m. to 10.00 a.m.
	M.E. (Electronics & Communication Engg.)	8.30 a.m. to 10.00 a.m.
	M.A. Journalism and Mass Communication	8.30 a.m. to 10.00 a.m.
	M.Sc. (Hons. School) Physics / Physics & Electronics; M.Sc. (2 Yr. Course) Medical Physics	11.00 a.m. to 12.30 p.m.
	M.Sc. (Hons. School / 2 Yr Course) Botany	11.00 a.m. to 12.30 p.m.
	MBACIT	11.00 a.m. to 12.30 p.m.
	M.E. Mechanical Engg. (Manufacturing Technology)	11.00 a.m. to 12.30 p.m.
	M.Tech. (Polymer)	11.00 a.m. to 12.30 p.m.
	Masters in Public Health	11.00 a.m. to 12.30 p.m.
	M.C.A.	1.30 p.m. to 3.00 p.m.
	M.Sc. (Hons. School / 2 Yr Course) Zoology	1.30 p.m. to 3.00 p.m.
	M.E. Electrical Engg. (Instrumentation & Control)	1.30 p.m. to 3.00 p.m.
	B.P.Ed.	1.30 p.m. to 3.00 p.m.
	M.A. (Business Economics)	1.30 p.m. to 3.00 p.m.
	M.A.B.E.	1.30 p.m. to 3.00 p.m.
	M.Sc. (System Biology and Bioinformatics) / M.Sc. (Bioinformatics) (2 Yr. Course)	1.30 p.m. to 3.00 p.m.
	M.A. in English	4.00 p.m. to 5.30 p.m.
	M.E. (Food Technology)	4.00 p.m. to 5.30 p.m.
	M.E. (Biotechnology)	4.00 p.m. to 5.30 p.m.
12-06-2016 (Sunday)	M.Sc. (Hons. School) Mathematics	8.30 a.m. to 10.00 a.m.
	M.A. (Geography)	8.30 a.m. to 10.00 a.m.
	M.Sc. (Hons. School / 2 Yr Course) Biotechnology	8.30 a.m. to 10.00 a.m.
	M.E.F.B.	8.30 a.m. to 10.00 a.m.
	M.E. (Chemical with specialization in Environmental Engg.)	8.30 a.m. to 10.00 a.m.
	M.Sc. (Industrial Chemistry)	11.00 a.m. to 12.30 p.m.
	M.Sc. (Hons. School) Computer Science	11.00 a.m. to 12.30 p.m.
	M.Sc. (2 Yr. Course) Nuclear Medicine	11.00 a.m. to 12.30 p.m.
	M.E. (Computer Science & Engg.)	11.00 a.m. to 12.30 p.m.
	M.E. Civil Engg. (Construction Tech. & Mgt.)	11.00 a.m. to 12.30 p.m.
	M.E. (Chemical)	11.00 a.m. to 12.30 p.m.
	M.P.Ed.	11.00 a.m. to 12.30 p.m.
	Master of Social Work	11.00 a.m. to 12.30 p.m.
	Masters in Disaster Management	1.30 p.m. to 3.00 p.m.
	MBA for Executive (MBAfEX)	1.30 p.m. to 3.00 p.m.
	M.Sc. (2 Yr. Course) Human Genomics	1.30 p.m. to 3.00 p.m.
	M.Tech. (Material Sciences & Technology)	1.30 p.m. to 3.00 p.m.
	LL.M.	1.30 p.m. to 3.00 p.m.
	M.Sc. (Hons. School) Biochemistry	1.30 p.m. to 3.00 p.m.

	M.Tech. (Nanoscience & Nanotechnology)	4.00 p.m. to 5. 30 p.m.
	M.Sc. (2 Yr. Course) Environment Science	4.00 p.m. to 5. 30 p.m.
	M.A. in Remote Sensing & GIS	4.00 p.m. to 5. 30 p.m.
	M.Sc. (Hons. School) Biophysics	4.00 p.m. to 5. 30 p.m.
	M.Com. (Business Innovation)	4.00 p.m. to 5. 30 p.m.
	M.E. Electrical Engg. (Power System)	4.00 p.m. to 5. 30 p.m.

- NOTE:**
1. Candidates desirous to appear in more than one of the above papers, must ensure that there is no clash of timings in those papers.
 2. The above dates of tests are tentative. Final dates of tests with time and venue of test will be indicated on the Admit Card.

THE PROCEDURE AND STEPS FOR FILLING ONLINE APPLICATION-CUM-ADMISSION FORM

STEPS TO FOLLOW:

- Register Online.
- Note down your Login Id and Password.
- Download SBI Slip and pay fee in any SBI branch.
- Login and upload scanned photograph, signature, fill other important information and Save and Confirm.

Registration Form:

Do not prefix the title such as Shri / Smt. / Mr. / Mrs. / Dr. etc. along with names.

Top of Form

Name#:

Father's Name#:

Mother's Name#:

Date of Birth:

E-mail:

Category

Categories other than General			
<input type="checkbox"/>	Scheduled Caste	<input type="checkbox"/>	Scheduled Tribe
<input type="checkbox"/>	Blind	<input type="checkbox"/>	PIO
<input type="checkbox"/>	Foreign	<input type="checkbox"/>	NRI
<input type="checkbox"/>	Backward Class		
(Only for the purpose of entrance test)			

Course's

Course in which Appearing
(Check atleast one box. if you wish to appear in more than one course check the corresponding boxes)

<input type="checkbox"/> L.L.M. <input type="checkbox"/> M.C.A. <input type="checkbox"/> M.A.Journalism & Mass Communication <input type="checkbox"/> Master in Public Health <input type="checkbox"/> M.A.(English) <input type="checkbox"/> M.A. (Geography) <input type="checkbox"/> Masters in Disaster Management <input type="checkbox"/> Masters in Remote Sensing & GIS <input type="checkbox"/> Master of Social Work <input type="checkbox"/> M.Tech(Nano Science & Nanotechnology) <input type="checkbox"/> M.E.(Chemical) <input type="checkbox"/> M.E.F.B.	<input type="checkbox"/> M.E. (Food Technology) <input type="checkbox"/> M.E. (Chemical with specialization in Environmentamental Engg.) <input type="checkbox"/> M.Tech. (Polymer) <input type="checkbox"/> M.Sc. (Industrial Chemistry) <input type="checkbox"/> M.E. Electrical Engg. (Instrumentation & Control) <input type="checkbox"/> M.E.(Electronics & Communication Engg.) <input type="checkbox"/> M.E.(Computer Sc. & Engg.) <input type="checkbox"/> M.E. Civil Engg. (Construction Tech. & Mgt.) <input type="checkbox"/> M.E. Mechanical Engg. (Manufacturing Tech.) <input type="checkbox"/> M.E. Electrical Engg (Power) <input type="checkbox"/> M.Tech.(Material Science & Technology) <input type="checkbox"/> M.E. Biotechnology
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<input type="checkbox"/> M.Com. (Hons.) <input type="checkbox"/> M.Com. (Business Innovation) <input type="checkbox"/> MBACIT <input type="checkbox"/> Master of Business Administration for Executives (MBAfEX) <input type="checkbox"/> M.P.Ed. <input type="checkbox"/> B.P.Ed.	<input type="checkbox"/> M.A. (B.E.) M.Sc (Hons.School) <input type="checkbox"/> Biochemistry <input type="checkbox"/> Biophysics <input type="checkbox"/> Computer Science <input type="checkbox"/> Mathematics <input type="checkbox"/> Physics & Electronics <input type="checkbox"/>
M.Sc (2 Year Course) <input type="checkbox"/> Bioinformatics <input type="checkbox"/> Environment Science <input type="checkbox"/> Human Genomics <input type="checkbox"/> Nuclear Medicine <input type="checkbox"/> System Biology and Bioinformatics <input type="checkbox"/> Microbial Biotechnology	M.Sc (2 Year Course) <input type="checkbox"/> Medical Physics M.Sc (Hons.School/2 Year Course) <input type="checkbox"/> Biotechnology <input type="checkbox"/> Botany <input type="checkbox"/> Chemistry <input type="checkbox"/> Physics <input type="checkbox"/> Zoology

Note: Candidate desirous to appear in more than one of the above papers, must ensure that there is no clash of timing in those papers.

Candidate Information:

Application No.

Course(s) Opted:

Category(s):

Medium of test (only for LLB)

Basic Information

Candidate Name:

Father's Name:

Mother's Name:

Gender : ☐ Male ☐ Female ☐ Transgender

Date of Birth:

Place of Birth

Nationality

Correspondence Address

Permanent Address

Phone No./Mobile No

E-mail ID

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