

SAMPLE QUESTIONS

Sample Questions for LL.M.

Part – I: Constitutional Law and Current Affairs

- The doctrine of "Basic Structure of the Constitution" was propounded by the Supreme Court of India in
 - Shankari Prasad v. Union of India, AIR 1951 SC 458
 - Golaknath v. State of Punjab, AIR 1967 SC 1643
 - Kesavananda v. State of Kerala, AIR 1973 SC 1461
 - Minerva Mills v. Union of India, AIR 1980 SC 1789
- The President of India may make a proclamation under Article 356 as to the breakdown of constitutional machinery in a State.
 - When he is personally satisfied as to them circumstances.
 - When he is advised by the Prime Minister to do so.
 - When he is advised by the Union Council of Ministers.
 - When he receives a report from the Chief Election Commission.
- The President of India, in the matters of appointment of Judges of a High Court :
 - Is not obliged to consult any Judge of Supreme Court or High Court.
 - Is bound by the advice of the Governor of a State
 - Must give primacy to the opinion of the Chief Justice of India.
 - Is not bound to consult the Chief Justice of India.
- Right to education has been included in the constitution by
 - 86th Amendment
 - 100th Amendment
 - 87th Amendment
 - 94th Amendment
- Ordinance can be promulgated by the president of India if,
 - Both the Houses of Parliament are in session
 - Both the Houses of Parliament are not in session
 - Either of the Houses is not in session.
 - None of the above.
- How many amendments have been carried out in constitution of India?
 - 109
 - 106
 - 99
 - 94
- Constitution 103rd Amendment has amended which articles of the Constitution?
 - 14 & 15
 - 15 & 16
 - 14 & 16
 - 14, 15 & 16
- The attempt to suicide is no more punishable. Which section of the IPC was declared unconstitutional and hence void by the Supreme Court in April, 1994?
 - 302
 - 303
 - 304
 - 309
- The newly elected President of USA Barack Obama belongs to which political party.
 - Republican
 - Democratic.
 - Communist
 - None of the above
- Since August 1994, the rupee has been made fully convertible in :
 - The capital account
 - The capital and saving account
 - The saving account
 - The current account

Part– II: Substantive Law

Commercial Law (Law of Contract and Company Law)

1. A contract entered into without 'Free Consent' is :
 - A) Void
 - B) Voidable
 - C) Valid
 - D) Illegal
2. Property insurance is a contract of :
 - A) Indemnity
 - B) Contingent contract
 - C) Wagering agreement
 - D) Guarantee
3. Creditor, on default by the principal debtor, can file suit against:
 - A) Secured property
 - B) Principal debtor alone
 - C) Surety and principal debtor;
 - D) All the above jointly.
4. A company is a Government Company only if :
 - A) All the shares of the company are held by Central or State Government;
 - B) At least 25% of Shares are held by Central or State Government;
 - C) Majority of Shares are held by Central or State Government or both;
 - D) Majority of Directors are appointed by the Central or State Government
5. Annual general meeting of a company is to be held with a gap between two consecutive meetings of successive Years;
 - A) Of not more than twelve month;
 - B) Of not more than twenty four months;
 - C) Of not more than fifteen months;
 - D) Any time but less than twenty four months

Family Law

1. Which of the following is valid marriage under the Hindu Marriage Act. 1955?
 - A) H, a male Hindu aged 35 marries W who is a deserted wife of B, who had filed a suit for divorce and suit is still pending
 - B) H, a male Hindu aged 36 marries a second wife with the consent of his first wife who has not been able to have a child for the last 10 Years
 - C) H, a Brahmin Male aged 30, marries a Buddhist girl aged 18
 - D) H, an idiot male Hindu aged 27 marries W, a Hindu female Lunatic
2. Which of the following is valid adoption under the Hindu Adoption & Maintenance Act, 1956?
 - A) H, a male Hindu aged 26 adopts a daughter aged 6
 - B) H, a male Hindu and his wife adopt a son aged 16
 - C) H, a male Hindu aged 40 adopted a son aged 5, after his natural born son migrated to the U.S.A.
 - D) H, a Hindu bachelor aged 25 adopts a son aged 3
3. Which of the following is Hindu under the Hindu Law?
 - A) A is born of Hindu father and Christian mother and brought up as a Christian
 - B) A is born of Hindu father and Buddhist mother
 - C) A is born of Muslim father and Parsi mother'
 - D) A is born of Christian father and Muslim mother
4. Which of the following relatives will succeed to the Property of H, a Hindu male under the Hindu Succession Act 1956 after his death?
 - A) Daughter
 - B) Father
 - C) Brother
 - D) Sister
5. Which of the following is SAHI NIKAH (valid marriage) under the Mohammedan Law?
 - A) M, a Mohammedan male aged 30 married W, a Muslim woman under-going Iddat
 - B) M, a Mohammedan male aged 27, married W, a Muslim woman in a desert, without any witness
 - C) M, a Mohammedan male aged 35, married his wife's sister
 - D) M, a Mohammedan male aged 41, married W, a Muslim female aged 21 as second wife without the consent and against the wishes of his first wife

Law of Torts

1. The defense of *Volenti non fit injuria* is available in :
 - A) Rescue cases
 - B) Help cases
 - C) Negligence cases
4. Malice/evil motive is relevant in :
 - A) Negligence
 - B) Defamation
 - C) Vicarious Liability
 - D) Nuisance

- D) Unlawful acts
2. The test of reasonable foreseeability was laid down in :
 - A) Re Polemis case
 - B) Donoghue v. Stevenson
 - C) Rylands v. Fletcher
 - D) Ashby v. White
 3. There is physical harm to the plaintiff in :
 - A) Assault
 - B) Defamation
 - C) Nervous shock
 - D) None of these
 5. Tort is :
 - A) A wrong against the Society
 - B) Statutorily defined in the Limitation Act
 - C) A codified branch of law
 - D) A civil wrong based on the agreed obligations

Legal Theory

1. Who observed that International Law is the vanishing point of jurisprudence?
 - A) Austin
 - B) Salmond
 - C) Starke
 - D) Holland
2. Identify the Jurist who defined Law as "the form of the guarantee of the conditions of life of society, assured by the states' power of constraint":
 - A) Roscoe Pound
 - B) Holmes
 - C) Ihering
 - D) Salmond
3. Realist theory of law emphasizes on:
 - A) Social function of law
 - B) Human factors in law
 - C) Social criterion of validity of law
 - D) Essentiality of law for social life
4. According to Hohfeld, the jural opposite of 'Power' in the context of his analysis of legal right in the wider sense is :
 - A) Liability
 - B) Disability
 - C) Duty
 - D) Immunity
5. Possession is said to be ownership on the defensive by :
 - A) Savigny
 - B) Salmond
 - C) Ihering
 - D) Gray

Public International Law

1. 'International Law may be defined in broad terms as the body of general principals and specific rules which are binding upon the members of the international community in their mutual relations'
 - A) Oppenheim
 - B) Lawrence
 - C) Brierly
 - D) Fenwick
2. 'The duties and rights of the States are only the duties and rights of men who compose them' :
 - A) Kelsen
 - B) Westlake
 - C) Hall
 - D) Starke
3. 'A State is, and becomes an international person, through recognition only and exclusively':
 - A) Oppenheim
 - B) Anzilotti
 - C) Holland
 - D) Pitt Corbett
4. "The rebus sic stantibus doctrine is one of the enigmas of International Law" who said
 - A) Starke
 - B) Edward Collin
 - C) Oppenheim
 - D) Anzilotti.
5. 'From the theoretical point of view, the provision for applying 'the General Principles of Law' has been regarded as sounding the death-knell of positivism':
 - A) Lauterpacht
 - B) C.C.Hyde
 - C) Starke
 - D) Triepel

Indian Penal Code

1. P, a Pakistani, fires at A, an Indian, standing on the no-man's land. A runs and dies on the Indian territory:
A) P has committed no offence
B) P is liable for murder
C) P is liable for attempt to culpable homicide
D) P is liable for attempt to grievous hurt.
2. With an intention to kill B administers sugar mistaking it for arsenic :
A) P has committed no offence
B) P is liable for attempt to murder
C) P is liable for culpable homicide
D) P is liable for grievous hurt.
3. P intentionally gives a sword cut to A. A subsequently dies of septic meningitis which developed on account of use of wrong remedies and neglect of treatment:
A) P is liable for murder
B) P is liable for culpable homicide
C) P is liable for grievous hurt
D) P is liable for simple hurt
4. P, a stoutly built man comes with a lathi in his hand. P picks up the bag of A who being weak person does not resist :
A) P is liable for theft
B) P is liable for robbery
C) P is liable for extortion
D) None of the above
5. P threatens A with a pistol and puts his hand in A's pocket which is empty :
A) P has committed no offence
B) P is liable for attempt to theft
C) P is liable for attempt to robbery
D) P is liable for attempt to extortion

Transfer of Property Act

1. Which of the following is a non-transferable property under the T.P.Act:
A) Actionable claim
B) Mortgagor's right to redeem
C) Lessee's right under the lease
D) Right of an occupancy tenant
2. The Supreme Court has held, that the rule of *lis pendens* equally applies to involuntary transfers, in the case of
A) Kedar Nath Vs. Sheo Narain AIR 1970 S.C. 1717
B) Narayana Rao Vs. Basavarajappa AIR 1956 S.C.727
C) Vidhyadhar Krishnarao Mungi Vs. Usman Gani Saheb AIR 1974 S.C.685
D) Beepathuma Vs. Velasari Shankra-Narayana Kadambolithaya AIR 1965 S.C.241
3. Where a mortgagor personally binds himself to repay; the mortgage money by a certain date and possession of the property is delivered to the Mortgagee, the mortgage shall be recognized as :
A) Simple mortgage
B) English mortgage
C) Usufructuary mortgage
D) Anomalous mortgage
4. The Transfer of Property Act applies to transfers :
A) By operation of Law
B) By act of parties
C) By the Government
D) By parties who are Muslims
5. The rule that every transaction involving transfer of property is to be treated as single unit is the basis of
A) The rule of apportionment
B) The rule of *lis pendens*
C) The rule of election
D) The rule of contribution

Industrial Disputes Act

1. The Industrial Disputes Act, 1947 aims at :
A) Providing social security benefits to the workmen
B) Regulating conditions of work in industries
C) Investigation and settlement of industrial disputes
D) Regulating the employment of women during certain periods
2. Retrenchment means :
A) Refusal by an employer to continue to employ a workman
B) Termination by the employer of the service of a workman for any reason whatsoever
C) Inability on the part of employer to provide employment to the workman
D) Voluntary retirement of a workman
3. The power of the Appropriate Government under Section 10 to refer industrial disputes for adjudication is :
A) An administrative power
B) Legislative power
C) Judicial power
D) Quasi-judicial power
4. Lockout is :
A) For trade reasons
B) An act on the part of employer taken to coerce or pressurize the labour
C) Not an intentional act
D) Not concerned with industrial dispute
5. Strike means :
A) Mere cessation of work
B) Cessation of work under common understanding
C) Cessation of work coupled with gherao of management
D) Slowing down production

Sample Questions for Master of Computer Applications (MCA)

- Which of the following is NOT a language processor?
A) Compiler
B) Loader
C) Interpreter
D) Assembler
- Which of the following is NOT an Internet protocol?
A) LTP
B) SMTP
C) HTTP
D) ATM
- The sequence that is in ascending order in size is
A) bit, word, byte, nibble
B) nibble, byte, bit, word
C) nibble, bit, word, byte
D) bit, nibble, byte, word
- Total number of ways in which four boys and three girls can sit in a row so that boys and girls have alternate seats is
A) 72
B) 144
C) 288
D) 720
- If the word MANMOHANWASHERE corresponds to ZOAABVNBJOFVRFRR, then the word that corresponds to LRF is
A) HEY
B) MAN
C) GOT
D) YES
- Two persons Ram and Shyam sort the letters at constant rate. Ram sorts L letters in 60 minutes while Shyam takes 30 minutes to sort L letters. The total time taken by both of them in sorting L letters working together but independently is
A) 10 min
B) 20 min
C) 15 min
D) 45 min
- The remainder obtained on dividing 2^{1680} by 1763 is
A) 1
B) 3
C) 13
D) 31
- The area bounded by the curve, $y = (x+1)^2$, its tangent at (1, 4) and the x-axis is
A) $1/3$
B) $2/3$
C) 1
D) $4/3$
- The median of 25,13,4,6,3,11,15,10 is
A) 4.5
B) 6.0
C) 10.5
D) 5.0

Sample Questions for M.A. Journalism and Mass Communication

1. Write about 150 words each on any two of the following: (16 Marks)
 - a) American Presidential elections
 - b) Budget 2008-09
 - c) Patriotism in Indian Cinema
 - d) Beijing Olympics 2008

2. Write about 150 words each on any two of the below listed personalities: (16 Marks)
 - A) Dr. Manmohan Singh
 - B) Young Turks in Indian Politics
 - C) Your role model
 - D) Sachin Tendulkar

3. Exhibit your analytic capabilities by arguing both for and against any one of the below listed motions in 100 words each:- (13 Marks)
 - a. Covid 19: How India fared in fighting corona virus compared to developed countries.
 - b. Online education, work from home: Have we arrived in virtual world.

4. **CURRENT AFFAIRS:** (10 Marks)

Choose one option to answer the questions:

 1. Who among the following was chosen by the TIME magazine as the 'Person of the Year 2019'?
 - A) Greta Thunberg
 - B) Rahul Gandhi
 - C) Narendra Modi
 - D) Donald Trump
 2. Which among the following countries has introduced VISA exemption for foreigners seeking medical treatment?
 - A) Pakistan
 - B) UK
 - C) India
 - D) China
 3. The Union Territory of Jammu & Kashmir has constituted an administrative council to fulfill all the government functions. Who will Chair the Council?
 - A) GC Murmu
 - B) R K Mathur
 - C) Amit Shah
 - D) Rajnath Singh
 4. Google has launched a new cloud-based game streaming service. What is the name of the game service?
 - A) Google Arcadia
 - B) Google Stadia
 - C) Google Playmates
 - D) Google Nixplay
 5. Which Bangladeshi cricketer has been banned from the sport for five years?
 - A) Soumya Sarkar
 - B) Mushfiqur Rahim
 - C) Shahadat Hossain
 - D) Liton Das
 6. Who announced that the NRC process will be carried out across India and over all citizens?
 - A) P M Narendra Modi
 - B) Defence Minister Rajnath Singh
 - C) President Ram Nath Kovind
 - D) Home Minister Amit Shah
 7. Germany will achieve its climate goals by which year, as per the recently passed Climate Protection Act?
 - A) 2025
 - B) 2030
 - C) 2035
 - D) 2040
 8. What was India's rank in the recently concluded World Para Athletics Championship?
 - A) 9th
 - B) 13th
 - C) 24th
 - D) 36th
 9. What is the percentage of growth in road accidents mentioned in 'Road Accidents in India-
 - A) 0.46 percent
 - B) 0.50 percent
 - C) 0.64 percent
 - D) 2.50 percent
 10. President' Colour was recently awarded to which institution on November 20?
 - A) Indian Naval Academy
 - B) Indian Air Force
 - C) Indian Army
 - D) All of the above

5. **GENERAL KNOWLEDGE** (10 marks)

Choose one option per question to answer the following Multiple Choice Question:

 1. Which among the following is through regarding the humidity of the air?
 - A) It increases with the increase in atmospheric temperature.
 - B) It decreases with the increase in atmospheric temperature.
 - C) It is not affected by the change in atmospheric temperature.
 - D) It does not show any consistent behavior with the change in atmospheric temperature.
 2. What are the grass lands of South America called?
 - A) Stepes
 - B) Prairies
 - C) Pampas
 - D) Savanna

3. Which of the following causes Earthquakes?
 A) Volcanic eruptions B) Landslides
 C) Cyclones D) Movement of a part of earth surfaces on account of the Faulting rocks
4. Which of the following is a reason behind the different seasons to occur?
 A) Sun is moving around the earth B) Of revolution of the earth around the sun on its orbit
 C) Tilt of Earth's axis D) All of the above
5. How do forests help soil?
 A) Soil Erosion B) Soil Protection
 C) Depleting the soil of its moisture D) All of the above
6. Which soil is best suited for paddy crop?
 A) Black soil B) Hard soil
 B) Loamy soil D) Red soil
7. The varieties of crops can be improved by which of the following methods?
 A) Dihybrid crosses B) Back cross
 C) Double cross D) Natural selection
8. Which of the following statements about the cultivation of tea & coffee is true?
 A) Tea grows at a higher altitude than coffee
 B) Coffee grows at a higher altitude than tea
 C) Both grow at about the same altitude
 D) There is no climatic relationship between the two crops
9. Which of the following crops has the highest photosynthetic activity?
 A) Cotton B) Sugarcane
 C) Rice D) Wheat
10. How does the Hybridisation develop improved crops?
 A) Creating new and better genes B) Eliminating undesirable genes
 C) Producing favourable combination of genes D) By encouraging favourable genes to removing unfavourable ones.

SAMPLE QUESTIONS FOR MASTER OF PUBLIC HEALTH

- Q1) Which is the source of Chlorofluorocarbons?
A. Thermal Power Plants
B. Automobiles
C. Refrigeration and Air – conditioning
D. Fertilizers
- Q2) Among cereals and millets richest source of calcium is:
A. Rice
B. Bajra
C. Maize
D. Ragi
- Q3) Bissinosis is common in:
A. Farmers
B. Textile Industry
C. Gold mine
D. Cement factory
- Q4) The most populous state in India is:
A. Uttar Pradesh
B. Bihar
C. Madhya Pradesh
D. Kerala
- Q5) A doctor suggested to a couple not to have more than one child because of
A. Rh+ male Rh- female
B. Rh- male Rh+ female
C. Rh+ male Rh+ female
D. Rh- male Rh- female
- Q 6) Acquired immunity is found in
A. Invertebrates
B. Vertebrates
C. Some Invertebrates
D. Both vertebrates and invertebrates
- Q 7) The incubation period of rabies ranges from –
A. 1 to 2 days
B. 3 to 4 days
C. 5 to 6 days
D. 10 days to 1 Year
- Q 8) At birth immunization required is
A. BCG and OPV-O
B. DPT-1
C. DPT-1 and OPV-1
D. Measles
- Q9) Anthracosis is caused due to
A. Coal Dust
B. Silica
C. Fe
D. Tobacco
- Q 10) Gini Index is associated with
A. Distribution of diseases
B. Distribution of Income
C. Distribution of deaths
D. Distribution of pollutants

SAMPLE QUESTIONS FOR M.A. (English)

- I. Write an essay within 400 words, taking a position 'For' or 'Against' on the topic given below:

The study of humanities is essential today.

OR

India has a bright future.

(25 marks)

- II. Read the poem below and answer the questions that follow:

My Heart Leaps Up

My heart leaps up when I behold
A rainbow in the sky;
So was it when my life began;
So is it now I am a man;
So be it when I shall grow old,
Or let me die!
The Child is father of the Man;
And I could wish my days to be
Bound each to each by natural piety.

- A. The poet could have used some other word instead of 'behold'. Why is this word used?
B. Point out any literary device (s) from the poem.
C. Explain the meaning of line number seven in your own words.
D. Suggest a title of the poem, and give its justification

(20 marks)

- III. Write a précis of the passage given below, reducing it to one-third of its length. Give a suitable title. Make sure you write one word in each box in the answer sheet:

In response to the food crisis of the mid-1960s, the government changed its agricultural strategy. Rather than holding out for the reform of agrarian institutions, it began to guarantee higher crop prices to farmers and utilize subsidies to promote use of modern inputs such as chemical fertilizers and high-yielding varieties of grain developed in other parts of the world. The resulting surge of production – the so-called “green revolution” of the late 1960s – made the country self-sufficient in food grains. The strategy was controversial because it increased economic disparities among the farmers, for the greatest chance of success, the government had to focus its strategy on the irrigated sections – the very parts of the country that were already doing relatively well. The uptake of subsidized inputs was also the highest among large landowners, owing to their greater education, credit worthiness, and the ability to bear the risk posed by adopting new methods. The strategy did not do much to alleviate the economic condition of the agrarian poor, other than providing the indirect benefit of living in a country with better overall food security that has not since experienced famine. Micronutrient deficiencies (not caloric) such as anemia are today a bigger problem among the poor, and the country's health indicators lag behind those of other countries with comparable levels of income.

The strategy toward industry, however, turned more interventionist after 1965. Elaboration of all the reasons for this need not detain us here; there is a strong case that the interventionist turn was a cynical ploy by new Prime Minister Indira Gandhi for consolidating her power in response to certain political developments. The new policy stance displayed a suspicion of large firms and a preference for the small. The licensing system imposed additional restrictions on the activities of large firms, curtailing their growth. Under a policy that was one of a kind, consumer goods such as apparel, footwear, furniture, sporting goods, office supplies, leather goods, and kitchen appliances were reserved by law for production by small firms. Foreign firms were asked to dilute their ownership stake in their Indian subsidiaries and in response, multinationals such as IBM and Coca-Cola closed their operations and left the country.

To the extent that the success of the large firms was due to their superior technical or organizational capacity, the curtailment of their growth meant that such capacity remained underutilized. Delays and arbitrariness in the issuing of industrial licenses resulted in supply bottlenecks and shortages of many consumer goods. For example, in the 1970s, there was an eight-year waiting list for people wanting to buy a scooter, the preferred vehicle for middle-class Indians.

The reservation of consumer goods for small enterprises meant that the benefits of economies of scale were forgone, resulting in the production of poor-quality and high priced goods that foreigners shunned and domestic consumers had no choice but to accept. Meanwhile, countries such as South Korea and Taiwan were growing rich by exporting this very category of goods. It was during this time that Indians developed a craze for foreign products, the imports of which were restricted, and the term imported” became synonymous with “high-quality.”The result of such policies was economic stagnation. The country’s per capita income grew by an average of less than 1 per cent a year between 1966 and 1980, a rate that was too low to make a dent in the country’s massive poverty. Thirty-five years after independence, India’s leadership had yet to achieve, to any significant degree, its pledge of lifting living standards.

(15 marks)

IV. Write short notes on **any three** (in not more than 150 words each):

1. Define allegory and give examples of modern allegories
2. Gothic novel
3. Stream-of-consciousness ad Technique in modern fiction
4. Pre-Raphaelite poetry
5. Literary sublime.

(15 marks)

SAMPLE MULTIPLE CHOICE QUESTIONS FOR M.A. (GEOGRAPHY)

1. The temperature of Thiruvananthapuram is lower than that of Mumbai in May and higher than that of Mumbai in January because:
 - A) Thiruvananthapuram has a cold current and Mumbai a warm current
 - B) Thiruvananthapuram has higher rainfall in summer and it is closer to the equator.
 - C) Thiruvananthapuram is on the windward side and Mumbai is on the leeward side.
 - D) Thiruvananthapuram is thickly vegetated while Mumbai is not
2. Which of the following is not a characteristic of a barkhan?
 - A) Its horns point in a down wind direction.
 - B) It has a crescent shape
 - C) Its windward slope is concave
 - D) It moves in the direction of the wind.
3. If the number of a Survey of India topographical sheet is 53 E/1, it’s scale is:
 - A) 1:25 000
 - B) 1:50 000
 - C) 1:250 000
 - D) 1:5000
4. Coral reefs are to be found in:
 - A) Polar latitudes
 - B) Tropical latitudes
 - C) Temperate latitudes
 - D) All of the above
5. The age and sex composition of the population is best represented by
 - A) Choropleth
 - B) Isopleth
 - C) Pie Diagram
 - D) Pyramid Diagram
6. Which of the following is an antecedent river?
 - A) Beas
 - B) Satluj
 - C) Ravi
 - D) Jhelum
7. Representative Fraction is a method used for showing
 - A) Scale on the map
 - B) Direction on the map
 - C) Contours on the map
 - D) Distance on the map
8. Which of the following is not a method used for finding north
 - A) Pole Star method
 - B) Similar Triangles method
 - C) Watch method
 - D) Rod method
9. Following is an example of cold desert
 - A) Sahara
 - B) Kalahari
 - C) Gobi
 - D) Mojave
10. Mercator’s Projection was used primarily for drawing
 - A) Distribution Maps
 - B) Political Maps
 - C) Navigational Maps
 - D) Cadastral Maps

SAMPLE MULTIPLE CHOICE QUESTIONS FOR MASTERS IN DISASTER MANAGEMENT

1. Spread of epidemics is associated with
 - A) Floods
 - B) Landslides
 - C) Earthquake
 - D) Volcanic Eruption
2. The switching over from the use of diesel to CNG is important because:
 - A) CNG is cheaper than diesel
 - B) Diesel is polluting fuel and CNG is non-polluting fuel
 - C) CNG is easily available

- D) CNG is a non renewable resource
3. Which of the following is caused due to water contamination?
 - A) Oral Cancer
 - B) Hypertension
 - C) Gastroenteritis
 - D) Tuberculosis
 4. Which of the following is a conventional source of energy?
 - A) Solar Energy
 - B) Thermal Energy
 - C) Tidal Energy
 - D) Wind Energy
 5. Which of the following is a primary activity?
 - A) Teaching
 - B) Retail trade
 - C) Mining
 - D) Tailoring
 6. RIO-10 (The World Summit for Sustainable Development) in 2002 was held at
 - A) Keo Karo (India)
 - B) Johannesburg (South Africa)
 - C) New York (USA)
 - D) Melbourne (Australia)
 7. Approximately 71% surface of earth is covered with water bodies, ice caps and glaciers that is why earth is also known as:-
 - A) Blue Planet
 - B) Green Planet
 - C) White Planet
 - D) Yellow Planet
 8. Which of the following is eco-friendly way of managing kitchen waste?
 - A) Open dumping
 - B) Land filling
 - C) Burning
 - D) Vermi Composting
 9. Indian Cheetah and Dodo bird are:
 - A) Vulnerable species
 - B) Extinct species
 - C) Threatened species
 - D) Rare species
 10. Harike wetland is located on confluence of which two rivers?
 - A) Ganga-Yamuna
 - B) Chandra-Bhaga
 - C) Ganga-Brahmaputra
 - D) Beas-Satluj

SAMPLE MULTIPLE CHOICE QUESTIONS FOR MASTERS IN GEOINFORMATICS

1. Consider the following statements:

A The representative fraction of a map = $\frac{\text{distance on the ground}}{\text{distance on the map}}$

B the denominator of the representative fraction is always once

 - A) A only
 - B) B only
 - C) Both A and B
 - D) Neither A or B
2. Map showing the depths of oceans and seas is termed as:
 - A) Ethnographic map
 - B) Orographic map
 - C) Bathymetric map
 - D) Geological map
3. Which one of the following is the largest scale of map?
 - A) 1 : 10 000
 - B) 1 : 50 000
 - C) 1 : 100 000
 - D) 1 : 1000 000
4. Kaziranga is famous for:
 - A) Great Indian Bustard
 - B) One horned rhino
 - C) Cheetah
 - D) Ostrich
5. In the topographical sheet settlements are represented by
 - A) Green Color
 - B) White Color
 - C) Red Color
 - D) Black Color
6. Silent Valley is located in
 - A) Kashmir
 - B) Kerala
 - C) Uttaranchal
 - D) Tamil Nadu
7. Which of the following is a perspective projection?
 - A) Cylindrical Equal Area
 - B) Bonne's Projection
 - C) Gnomonic Projection
 - D) Sinusoidal Projection
8. The point vertically below the camera lens in a photograph is called:
 - A) Ground point
 - B) Principal point
 - C) Isocenter
 - D) Ground nadir point
9. Which one of the following is the smallest scale of map?
 - A) 1 : 10 000
 - B) 1:50 000
 - C) 1: 100 000
 - D) 1: 1000 000

10. Output Device of a computer is:

- A) Keyboard
- B) Printer
- C) Monitor
- D) Speaker

11. Pixel refers to

- A) Picture element
- B) Picture effect
- C) Perfect element
- D) Primary element

12. The term GPS refers to:

- A) Global Prevention System
- B) Global Protection System
- C) Global Positioning System
- D) None of the above.

13. The term GIS refers to:

- A) Geographical Informative System
- B) Global Information System
- C) Geological Information System
- D) Geographical Information System

Sample question paper Master of History

- Note :
1. Question No. 1 under Unit-I is compulsory. Attempt any 05 Questions in 80-100 words each. Each question carries 05 marks. (5 x 5 = 25 marks).
 2. Attempt any one Question from Unit –II in about 1000 words. Each Question carries 25 marks.
 3. Attempt any One Question from Unit-III in about 1000 words. Each Question carries 25 marks.

UNIT-I

Q-I

- i. What is meant by Mahajanpada ?
- ii. Explain Dhamma.
- iii. Explain Mansabdari System.
- iv. What was meant by Sangat ?
- v. Who were the Sufis ?
- vi. What is meant by commercialisation of agriculture ?
- vii. Explain Doctrine of Lapse.
- viii. Discuss the demand of Punjabi Suba ?

UNIT-II

- Q-II Write a note on the agriculture conditions in Ancient India.
- Q-III Comment on the impact on Mohhanmad-Bin-Tuglaq's administrative experiments.
- Q-IV Assess the contribution of the masses in the struggle for Independence.
- Q-V How did Maharaja Ranjit Singh establish the kingdom of Lahore ?

UNIT-III

- Q-VI What should be the role of the opposition parties in the Parliament ?
- Q-VII Comment on the status of Women in Post Independent India.

Sample Question Paper for Entrance Test for Admission to M.A. Economics

1. Which of the following does not represent elasticity of substitution?
A) Proportionate Change in capital intensity due to proportionate change in MRTS_{LK}
B) Proportionate change in capital intensity due to proportionate change in relative factor prices?
C) Proportionate change in capital intensity due to proportionate change in relative Marginal productivity of factor.
D) Proportionate change in capital labour ratio due to Proportionate change in inputs.

2. The Haavelmo Theorem is popularly known as:

- A) Income Multiplier
B) Employment Multiplier
C) Foreign Trade Multiplier
D) Balanced Budget Multiplier

3. On which of the following argument Keynes agree with classical?

- A) Labour Supply Function
B) Labour Demand Function
C) Wage Price Flexibility
D) Interest rate as real phenomenon.

4. The F-statistics in OLS estimation is the test of

- A) Significance of individual regression coefficients
B) Goodness of fit in the model
C) Significance of variance of the dependent variable
D) Significance of the variance of independent variable.

5. Which one of the following is not a formula of measuring correlation coefficient?

A) $b_{yx} \times b_{xy}$

B) $r_{xy} = \frac{\sigma_x}{\sigma_y} b_{yx}$

C) $r_{xy} = \frac{\sigma_{xy}}{\sigma_x \times \sigma_y}$

D) $r_{xy} = \frac{\sigma_{xy}}{\sigma_x^2 \times \sigma_y^2}$

6. Look at this series: 53, 53, 40, 40, 27, 27,... What number should come next?

- A) 12
B) 14
C) 27
D) 53

7. Look at this series: 15, __, 27, 27, 39, 39,... What number should fill the blank?

- A) 51
B) 39
C) 23
D) 15

8. NITI Aayog has replaced

- A) Finance Commission of India
B) Planning Commission of India
C) Reserve Bank of India
D) Ministry of Finance

9. Chelliah Committee was appointed for

- A) Fiscal reforms
B) Monetary reforms
C) Agricultural reforms
D) Industrial reforms

10. Adolph Wagner gave a model of

- A) Industrial Location
B) Agricultural Transformation
C) Public Expenditure
D) Correlation

Sample Question Paper for Entrance Test for Admission to Masters of Social Work

1. What is cultural lag?
 - a) It is gap between materialistic and non-materialistic aspects of culture of a society.
 - b) It is a state of equilibrium between materialistic and non-materialistic aspects of culture of a society.
 - c) It is a gap between the cultures.
 - d) None of the above
2. Urbanism is way of life, whereas urbanisation is a process
 - a) Burgess
 - b) Wirth
 - c) Murdock
 - d) Maclver
3. Sex ratio of females per 1000 males in India according to 2011 census is
 - a) 927
 - b) 940
 - c) 933
 - d) 942
4. Types of mobility occurred due to the change of job without status change is known as.....
 - a) vertical mobility
 - b) open system mobility
 - c) horizontal mobility
 - d) inter-generational mobility
5.said "We are also human being in 1927."
 - a) Dr. B.R. Ambedkar
 - b) Swami Vivekananda
 - c) Mahatma Gandhi
 - d) Jawahar Lal Nehru
6. Who is known as 'the father of local self-government' in India?
 - a) Mahatma Gandhi
 - b) Jawaharlal Nehru
 - c) Lord Ripon
 - d) Lord Canning
7. Honour killing unfortunately is practiced
 - (a) In India only
 - (b) In developing countries only
 - (c) Across the world
 - (d) In developed countries
8. Teachers Day is observed on the birthday of:
 - (a) Mahatma Gandhi
 - (b) Jawaharlal Nehru
 - (c) Dr.Radha Krishnan
 - (d) Rabindranath Tagore
9. 'Mixed economy' refers to
 - (a) The promotion of agriculture as well as cottage and heavy industries
 - (b) The coexistence of public sector as well as private sector
 - (c) The coexistence of different economic classes
 - (d) None of these
10. R.T.I. stands for
 - (a) Right to Interest
 - (b) Right to Information
 - (c) Right to Investigation
 - (d) Right to Infrastructure
11. I.L.O. stands for
 - (a) International Labor Organization
 - (b) Indian Labor Organization
 - (c) Intra Labor Organization
 - (d) Institute Labor Organization
12. Largest Nationalized Bank of India is
 - (a) Bank of India
 - (b) Canara Bank
 - (c) Union Bank of India
 - (d) State Bank of India
13. Modern Device is used in
 - (a) Television
 - (b) Computer
 - (c) Car
 - (d) Radio
14. Domestic Violence Act came into action in
 - (a) 2004
 - (b) 2007
 - (c) 2006
 - (d) 2005
15. 10th December is celebrated as
 - (a) Human Right Day
 - (b) Elderly People Day
 - (c) Girl Child Day
 - (d) Mother's Day

**SAMPLE MULTIPLE CHOICE QUESTIONS FOR M.E. (CHEMICAL)& M.E. (CHEMICAL)
WITH SPECIALISATION IN ENVIRONMENTAL ENGINEERING**

Pick-up the correct option:

- 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
 - 30554
 - 10373
 - 4988.4
 - 4364.9
- 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
 - 6738.9
 - 6753.5
 - 7058.3
 - 900
- A dilute aqueous solution is to be concentrated in an evaporator system. High pressure steam is available. Multiple effect evaporator system is employed because.
 - total heat transfer area of all the effects is less than that in a single effect evaporator system
 - total amount of vapour produced per kg of feed steam in a multieffect system is much higher than in a single effect
 - boiling point elevation in a single effect system is much higher than that in any effect in a multieffect system.
 - heat transfer coefficient in a single effect is much lower than that in any effect in a multieffect system
- Minimum reflux ratio in a distillation column results in
 - Optimum number of trays
 - Minimum reboiler size
 - Maximum condenser size
 - Minimum number of trays
- An elementary liquid phase decomposition reaction $A \xrightarrow{k} 2B$ is to be carried out in a CSTR. The design equation is
 - $k\tau = \frac{X_A}{(1 - X_A)}$
 - $k\tau = X_A \frac{(1 - X_A)}{1 - X_A}$
 - $k\tau = \frac{X_A}{(1 - X_A)}$
 - $k\tau_{AO} = \frac{X_A / (1 + X_A)^2}{(1 - X_A)^2}$
- 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 |

 - P-1, Q-2, R-5, S-3
 - P-5, Q-4, R-3, S-2
 - P-5, Q-4, R-1, S-2
 - P-3, Q-4, R-5, S-1
- 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

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
- For an isotherm process, pressure, P and Bulk modulus, K is related as:
 - $K = P$
 - $K = \square P$
 - $K = P/\square$
 - $K = \square p^2$
- Which one of the following fluids is essentially a non-Newtonian fluid under normal working conditions?
 - blood
 - thin lubricating oil
 - water
 - air
- The pressure drop per unit length of a pipe under laminar flow condition is:
 - $\frac{32\mu V_{av}}{d^2}$
 - $\frac{128\mu Q}{\pi l^4}$
- either (a) or (b)
d) none of these
- 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.
- 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
- For a binary mixture at constant temperature, with the increase of total pressure, the relative volatility:
 - decreases
 - increases
 - remains constant
 - none of these
- 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
- 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
- (a) (3,7)
 (b) (4,8)
 (c) (5,9)
 (d) (10,15)
- Q.2. The set of equation $x + y - 2z = 0$, $2x - 3y + z = 0$, $x - 5y + yz = k$ is consistent for
- (a) $K = 0$
 (b) $K = 1$
 (c) $K = 2$
 (d) $K = 5$
- 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
- (a) U
 (b) $2U$
 (c) $3U$
 (d) $5U$

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.
- (a) \vec{V} and \vec{B}
 (b) \vec{F} and \vec{V}
 (c) \vec{F}_m and \vec{B}
 (d) None of the above
- Q.5. A body under the action of inverse square force will follow an elliptical path, if eccentricity
- (a) $e=0$
 (b) $e=1$
 (c) $e>1$
 (d) $e<1$ (Positive)
- Q.6. If $\vec{B} = \text{curl } \vec{A}$, then
- (a) $\vec{\nabla} \cdot \vec{B} = 0$
 (b) $\vec{\nabla} \cdot \vec{B} = 1$
 (c) $\vec{\nabla} \cdot \vec{B} = A$
 (d) $\vec{\nabla} \cdot \vec{B} = -1$

PART-C : CHEMISTRY

- Q.7. The IUPAC name for $\text{CH}_3\text{CH}_2 - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{OCH}_3$ is
- (a) methyl propanoate
 (b) Propanedioic acid
 (c) 2-propanoic acid
 (d) 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
 - 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

- frequency. The oscillations
- Can be reduced by increasing the proportional action.
 - Can be reduced by increasing the integral action.
 - Can be reduced by increasing the derivative action.
 - Cannot be reduced.

- And capacitors in a filter-type circuit
- For a first order instrument a 5% settling time is equal to
 - Three times the time constant.
 - Two times the time constant.
 - The time constant.
 - Time required for the output signal to reaches 5% of the final value.

Sample Questions for

M.E. (Electronics and Communication Engineering) Regular Programme / M.E. (Electronics & Communication Engg. With specialization in Artificial Intelligence)

- Which rectifier requires four diodes?
 - half-wave voltage doubler
 - full-wave voltage doubler
 - full-wave bridge circuit
 - voltage quadrupler
- If the input is a rectangular pulse, the output of an integrator is a
 - Sine wave
 - Square wave
 - Ramp
 - Rectangular pulse
- The energy gap in a semiconductor
 - Increases with temperature
 - Does not change with temperature
 - Decreases with temperature
 - Is zero
- The LASER diode sources require
 - Spontaneous emission
 - Absorption
 - Stimulated emission
 - 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
 - 0
 - 1
 - 32, 767
 - 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
 - 2
 - 3
 - 4
 - 5
- Which device is considered a current controlled device:
 - Diode
 - Field effect transistor
 - Transistor
 - Resistor
- In an amplifier, the emitter junction is
 - Forward Biased
 - Reverse Biased
 - Grounded
 - Shorted
- Unijunction Transistor has three terminals,
 - Cathode, Anode, Gate
 - Grid, Plate, Cathode
 - Base 1, Base 2, Emitter
 - Gate, Base 1, Base 2
- GSM stands for
 - Global System for Mobile Communication
 - Global System for Multiplexing
 - Group System for Mobile Communication
 - 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?
 - Abstract Syntax tree
 - Symbol Table
 - Variable value stack
 - Parse tree
- Seven (distinct) car accidents occurred in a week. What is the probability that they all occurred on the same day?
 - $1/7^7$
 - $1/7^6$
 - $1/2^7$
 - $7/2^7$
- Which of the following statements is false
 - As unambiguous grammar has same leftmost and rightmost derivation
 - An LL (1) parser is top down parser
 - LALR is more powerful than SLR
 - An ambiguous grammar can never be LR (k) for any k

4. What will be the output of the following program?
- ```
void main()
{int var 1 = 10, var2 = 20, var3;
Var3 = var1++ + ++var2;
Printf("%d%d%d", var1, var2, var3);}
```
- A) 10 20 30                      B) 11 21 31  
C) 10 21 30                      D) 11 21 30
5. Which of the following data structures will allow mergesort to work in  $O(n \log n)$  time?
- A singly linked list
  - A doubly linked list
  - An array
- A) III only  
B) I and II only  
C) II and III only  
D) I, II and III
6. In the internet Protocol (IP) suite of protocols, which of the following best describes the purpose of the Address Resolution Protocol?
- A) To translate Web addresses to host names  
B) To determine the IP address of a given host name  
C) To determine the hardware address of a given host name  
D) To determine the hardware address of a given IP address
7. The binary relation  $R = \{ (1,1), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), (3,4) \}$  on the set  $A = \{1,2,3,4\}$  is:
- A) reflexive, symmetric and transitive  
B) neither reflexive, nor irreflexive but transitive  
C) irreflexive, symmetric and transitive  
D) irreflexive and antisymmetric
8. Consider the following statements:
- First-in first-out types of computations are efficiently supported by STACKS
  - Implementing LISTS on linked lists is more efficient than implementing LISTS on an array for almost all the basic LIST operations
  - Implementing QUEUES on a circular array is more efficient than implementing QUEUES on a linear array with two indices
  - Last – in – first – out type of computations are efficiently supported by QUEUES
- A) (ii) and (iii) are true  
B) (i) and (ii) are true  
C) (iii) and (iv) are true  
D) (ii) and (iv) are true
9. A binary search tree is generated by inserting in order of following integers  
50,15,62, 5, 20, 58, 91, 3, 8, 37, 60, 24  
The number of nodes in the left subtree and right subtree of the root respectively is
- A) (4, 7)  
B) (7, 4)  
C) (8, 3)  
D) (3, 8)
10. A directed graph with  $n$  vertices and  $e$  edges are represented by Adjacency matrix. What is the time required to determine the in-degree of a vertex?
- A)  $O(e)$   
B)  $O(n)$   
C)  $O(n^2)$   
D)  $O(e+n)$

**Sample Questions for  
M. E - Computer Science & Engineering (Specialisation: Internet of Things) Regular  
Programme**

1. IoE refers to
  - A. Internet of Everything
  - B. Instances of Everything
  - C. Internet of Each
  - D. None of these
  
2. In Advanced Wireless Networks, the wireless node is referred to as
  - A. Mote
  - B. Smart Gadget
  - C. Smart Device
  - D. None of these
  
3. Which of these steps is included in the requirement engineering process?
  - A. Feasibility Study
  - B. Requirement Gathering
  - C. Software Requirement Specification and Validation
  - D. All of these
  
4. How much faster is binary search when compared to linear search?
  - A. Exponentially Faster
  - B. Twice as fast
  - C. Faster by a factor of  $\log n$
  - D.  $n$  times faster
  
5. This sort does not used divide and conquer methodology
  - A. Bubble Sort
  - B. Merge Sort
  - C. Quick Sort
  - D. All of the above
  
6. A CPU has 32-bit address bus. How much memory can it address?
  - A. 4 GB
  - B. 1 GB
  - C. 2 GB
  - D. 8 GB
  
7. Which of the given language is not commonly used for AI?
  - A. LISP
  - B. Prolog
  - C. Python
  - D. Perl
  
8. Which of the following techniques would perform better for reducing dimensions of a data set?
  - A. removing columns which have too many missing values
  - B. removing columns which have high variance in data
  - C. removing columns with dissimilar data trends
  - D. none of these
  
9. Consider Subnet mask of class B network in the internet is 255.255.240.0. What is the maximum number of hosts per subnet?
  - A. 4096
  - B. 4098
  - C. 4092
  - D. 4094

10. Which of the following transport layer protocols is used to support electronic mail?  
 A. IP  
 B. TCP  
 C. UDP  
 D. SMTP

**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)  $\frac{4}{3} MI^2$
- 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  $\frac{1}{8}$  (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 /  
M.E. ( Mechanical Engg. With specialization in Robotics)**

- 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  
(a)  $ML^{-1}T^{-2}$   
(b)  $MLT^{-2}$   
(c)  $M^{-1}L^{-1}T^{-1}$   
(d)  $ML^{-2}T^{-2}$
- Q.3. Which of the following processes would be best suited for stress relieving, improving machineability and ductility in casting and deep drawn components  
(a) Austempering  
(b) Tempering  
(c) Normalising  
(d) Annealing
- Q.4. The pressure intensity at a point in a fluid is same in all directions, only when  
(a) The fluid is frictionless  
(b) The fluid is frictionless and incompressible  
(c) The fluid has zero viscosity and is at rest
- Q.5. In orthogonal cutting, cutting face is inclined to the direction of cut at  
(a) 90 degree  
(b) Less than 90 degree  
(c) Between 30 and 45 degrees  
(d) Greater than 90 degree
- Q.6. In statistical quality control  $\pm 3\sigma$  means the percentage of items within acceptable limits will be:  
(a) 68.26  
(b) 95.46  
(c) 99.73  
(d) 50
- Q.7. In the specification of fits  
(a) Allowance is equal to twice the tolerance  
(b) Allowance is equal to half of tolerance  
(c) Allowance is independent of tolerance  
(d) Allowance is equal to the difference between maximum material limit mating parts.

**Sample Questions for ME Electronics and Communication Engineering (Artificial Intelligence)**

1. The minimum number of comparators required to build an 8-bit flash ADC is  
(a) 8  
(b) 63  
(c) 255  
(d) 256
2. In a sequential circuit, the outputs at any instant of time depends  
(a) only on the inputs present at that instant of time  
(b) on past outputs as well as present inputs  
(c) only on the past inputs  
(d) only on the present outputs
3. A device that does not exhibit negative resistance characteristics is  
(a) FET  
(b) UJT  
(c) Tunnel Diode  
(d) SCR

4. The cascade amplifier is a multistage configuration of
  - (a) CC-CB
  - (b) CE-CB
  - (c) CB-CC
  - (d) CE-CC
5. Voltage series feedback (also called series-shunt feedback) results in
  - (a) increase in both I/P and O/P impedences
  - (b) decrease in both I / P and O/P impedences
  - (c) increase in I/P impedance and decrease in O/P impedance
  - (d) decrease in I/P impedance and increase in O/P impedance
6. GSM stands for
  - (a) Global System for Mobile Communication
  - (b) Global System for Multiplexing
  - (c) Group System for Mobile Communication
  - (d) None of these
7. 2's complement representation of 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) 65,563
8. The LASER diode sources require
  - (a) Absorption
  - (b) Spontaneous Emission
  - (c) Stimulated Emission
  - (d) None of the above
9. The ripple factor half wave rectifier is
  - (a) 0.406
  - (b) 1.21
  - (c) 1.11
  - (d) 2.22
10. 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

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

- |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Q.1</b> The maximum efficiency of a half-wave rectifier circuit can be</p> <ol style="list-style-type: none"> <li>(A). 37.2%</li> <li>(B). 40.6%</li> <li>(C). 53.9%</li> <li>(D). 81.2%</li> </ol>                                                                                                    | <p><b>Q.6</b> For a two port linear passive bilateral network is</p> <ol style="list-style-type: none"> <li>(A). <math>AD=BC</math></li> <li>(B). <math>AD-BC=0</math></li> <li>(C). <math>AD-BC=1</math></li> <li>(D). <math>AB-BC=1</math></li> </ol>                                                |
| <p><b>Q.2</b> 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</p> <ol style="list-style-type: none"> <li>(A) 300 A</li> <li>(B) 450 A</li> <li>(C) 150 A</li> <li>(D) 200 A</li> </ol> | <p><b>Q.7</b> A distribution station has a peak load of 3000 kW and total annual energy of <math>10^7</math> kWh. The peak power loss is 220 kW. The loss factor is:</p> <ol style="list-style-type: none"> <li>(A). 0.215</li> <li>(B). 0.285</li> <li>(C). 0.325</li> <li>(D). 0.356</li> </ol>      |
| <p><b>Q.3</b> A 100 mA meter has accuracy of <math>\pm 2\%</math>. Its accuracy while reading 50 mA will be</p> <ol style="list-style-type: none"> <li>(A) <math>\pm 1\%</math></li> <li>(B) <math>\pm 2\%</math></li> <li>(C) <math>\pm 4\%</math></li> <li>(D) <math>\pm 20\%</math></li> </ol>            | <p><b>Q.8</b> The load frequency response in a system</p> <ol style="list-style-type: none"> <li>(A). Does consider the reactive power flow</li> <li>(B). Does not consider the reactive power flow</li> <li>(C). Does not consider the real power flow</li> <li>(D). Consider Active power</li> </ol> |

- 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 $\Omega$  .The resistor value corresponding to MSB will be
- (A). 32 $\Omega$   
(B). 16 $\Omega$   
(C). 8 $\Omega$   
(D). 4 $\Omega$
- Q.9** For a synchronous phase modifier, the load angle is
- (A). 0 $^\circ$   
(B). 25 $^\circ$   
(C). 30 $^\circ$   
(D). 50 $^\circ$
- 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.** In a solid lattice the cation has left a lattice site and is located at an interstitial position, the lattice defect is
- A) Interstitial defect  
B) Frenkel Defect  
C) Schottky Defect  
D) Valency Defect
- Q2.** The existence of energy bands in a solid is a consequence of
- A) Interaction of atoms  
B) Interference of electron waves  
C) Random motion of electrons  
D) Effective mass of electron
- Q3.** Two sources of light are said to be coherent if waves produced by them have the same
- A) Frequency  
B) Amplitude  
C) Amplitude and same wavelength  
D) Frequency and constant phase difference
- Q4.** Beautiful colours of oil films and soapy water are due to
- A) Interference  
B) Diffraction  
C) Polarisation  
D) Compton effect
- Q5.** Which elements have non bonding electrons
- A) Elements with lone pair  
B) Electronegative elements  
C) Both of them  
D) None of them
- Q6.** Enzyme-substrate kinetics can be studied via
- A) Stern Volmer plots  
B) DFT calculation  
C) Michaelis Menten Kinetics  
D) none of the above
- Q7.** Which of the following is an aromatic amino acid
- A) Tyrosine  
B) Glutamic acid  
C) Arginine  
D) Cystenine
- Q8.** 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)  $2\pi$  (B)  $4\pi$   
C)  $6\pi$  (D)  $8\pi$
- Q9.** Find the flux of  $\vec{F} = (x - y)\hat{i} + x\hat{j}$  across the circle  $x^2 + y^2 = 1$  in the xy-plane.
- A) 0  
B) 1  
C)  $\pi$   
D) (d)  $-\pi$
- Q10.** In a skew symmetric matrix A, all diagonal element are \_\_\_\_\_
- A) 1  
B) 2  
C) -1  
D) 0

## 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 question paper MTech (Micro-electronics)

1. A thin P-type silicon sample is uniformly illuminated with light which generates excess carriers. The recombination rate is directly proportional to
  - A. The minority carrier mobility
  - B. The minority carrier recombination lifetime
  - C. The majority carrier concentration
  - D. The excess minority carrier concentration
  
2. n-type Silicon is obtained by doping Silicon with
  - A. Germanium
  - B. Aluminium
  - C. Boron
  - D. Phosphorus
  
3. A region of negative differential resistance is observed in the current voltage characteristic of a silicon PN junction if
  - A. Both the P-region and the N-region are heavily doped
  - B. The N-region is heavily doped compared to the P-region
  - C. The P-region is heavily doped compared to the N-region
  - D. An intrinsic Silicon region is inserted between the P-region and the N-region.
  
4. A silicon PN junction is forward biased with a constant current at room temperature. When the temperature is increased by  $10^{\circ}\text{C}$ , the forward bias voltage across the PN junction
  - A. Increases by 60mV
  - B. Decreases by 60 mV
  - C. Increases by 25 mV
  - D. Decreases by 25 mV
  
5. The Ebers-Moll model of a BJT is valid
  - A. Only in active mode
  - B. Only in active and saturation modes
  - C. Only in active and cut-off modes
  - D. In active, saturation and cut-off modes
  
6. In IC technology, dry oxidation (using dry oxygen) as compared to wet oxidation (using steam or water vapour) produces
  - A. Superior quality oxide with a higher growth rate
  - B. Inferior quality oxide with a higher growth rate
  - C. Inferior quality oxide with a lower growth rate
  - D. Superior quality oxide with a lower growth rate
  
7. Under the DC conditions, the collector-to-emitter voltage drop is
  - A. 4.8 Volts
  - B. 6.0 Volts
  - C. 5.3 Volts
  - D. 6.6 Volts

### Sample Questions for M.E. (Mechanical Engineering)

- Which one of the following is correct?  
In normal shock wave in one dimensional flow
  - The entropy remains constant
  - The entropy increases across the shock
  - The entropy decreases across the shock
  - The velocity, pressure, and density increase across the shock
- Which of the following are the limitation of the powder metallurgy?
  - High tooling and equipment costs
  - Wastage of material
  - It cannot be automated
  - Expensive metallic powders

Select the correct answer using the code  
Code – 1) Only A and B  
Code – 2) Only B and D  
Code – 3) Only A and D  
Code – 4) Only A, B and D
- Subcooling in the condenser of a refrigerator system is advisable when
  - Expansion system is at a higher elevation value is at a higher
  - There is a large pressure drop in the line connecting condenser to the expansion valve.
  - The refrigeration effect is to be increased.
  - The compressor work is to reduced

Code – 1) Only A and B  
Code – 2) Only A, C and D  
Code – 3) Only B, C and D  
Code – 4) A, B and D
- An Orthotropic material under plane stress condition will have
  - 15 independent elastic constants
  - 5 independent elastic constants
  - 6 independent elastic constants
- When dry bulb and thermodynamic wet bulb temperatures are same
  - Humidity ratio is 100%
  - Partial pressure of water vapour equal total pressure
  - Air is fully saturated
  - Dew point temperature is reached
  - All of these
  - None o these
- In a cooling tower, the minimum temperature to which water can be cooled is equal to the
  - Dew point temperature of the air at the inlet
  - Dry bulb temperature of the air at the inlet
  - Thermodynamic wet bulb temperature of the air at the inlet
  - Mean of the dew point and dry bulb temperature of the air at inlet

### Sample Questions for M.Com. ( Business Economics )

- Accounting is the language of –
  - Business
  - Books of Accounts
  - Accountant
  - None of these
- Which of the following is not included under accounting concepts?
  - Money Measurement Concept
  - Business Entity Concept
  - Continuity Concept
  - None of these
- Which expenses is of Capital Nature?
  - Depreciation
  - Wages
  - Salary
  - Stationary
- Dividend can be declared from –
  - Revenue Profit
  - Capital Profit
  - Secret Reserve
  - All of these
- Privatization is the result of –
  - Economic Compulsion
  - Social Compulsion
  - Global Compulsion
  - Market Compulsion
- An agreement enforceable by law is called –
  - Voidable Contract
  - Void Agreement
  - Legal Agreement
  - Valid Contract
- The Sale of Goods Act came into force from
  - July 1, 1932
  - July 1, 1930
  - July 1, 1935
  - July 1, 1940

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

  - Mode
  - Mean
  - Median
  - All of these
- The arithmetic mean of a series is the figure obtained by dividing the sum of values all items by
  - 2
  - 3
  - 3
  - Their Number

Which of the following is Business Averages?

  - Moving average
  - Progressive average
  - Composite Average
  - All of these

**M.Com (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.  
 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) Loudly  
 C) Loudely  
 D) Loudingly

**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
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
3. The value of the variable which occurs most frequently in a distribution is called  
 A) Mode  
 B) Mean  
 C) Median  
 D) All of these
4. 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
5. 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
2. Which of the following is not a function of controller?
  - A) Financial reporting
  - B) Managerial reporting
  - C) Money management
  - D) Cost management
- Ending finished goods inventory is:
  3. 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
- Which of the following is also known as an inventoriable cost?
  4. A) Period cost
  - B) Fixed cost
  - C) Product cost
  - D) Conversion cost
- A cost management tool that brings in its focus the activities performed to produce a product is called
  5. A) target costing
  - B) life cycle costing
  - C) ABC
  - D) benchmarking
- The first Factories Act was enacted in
  6. A) 1881
  - B) 1895
  - C) 1897
  - D) 1885
- If the date of incorporation of a company is 1/01/2005, the first AGM must be held before
  7. A) 30/06/2006
  - B) 31/03/2006
  - C) 31/12/2005
  - D) 31/03/2005
- The 'right to information' under the RTI Act, 2005 includes the right to
  8. 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
- Long term capital asset is an asset (other than financial securities) which is held by the assessee for more than
  9. A) 36 months
  - B) 24 months
  - C) 12 months
  - D) 60 months
- When an oligopolist individually chooses its level of production to maximize its profits, it charges a price that is
  12. 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 monopoly and more than the price charges by a competitive market
- 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
  13. 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.
- The Government of India has decided to cover all districts of the country in National Rural Employment Guarantee Programme (NREGP)
  14. 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
- Reserve Bank of India calculates four components of money supply, M1, M2, M3, M4. Which one of the following statement is not correct?
  15. A)  $M1 = \text{currency with public} + \text{demand deposits with banks}$
  - B)  $M2 = M1 + \text{post office savings deposit}$
  - C)  $M3 = M1 + M2$
  - D)  $M4 = M3 + \text{total post office deposits}$
- What is meant by the term functional management?
  16. 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
- Maslow, in his triangle of human needs, showed that
  17. 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) Self-actualization is a high order human need

- A) 36 months  
B) 12 months  
C) 24 months  
D) 30 months
- The definition of 'Goods' under the Central Sales Tax Act, 1956 does not include
10. A) Newspapers  
B) Standing crops  
C) Computer software  
D) Animals
- A rational person does not act unless
11. A) the action is ethical  
B) the action produces marginal costs that exceed marginal benefits  
C) the action produces marginal benefits that exceed marginal costs  
D) the action makes money for the person
- 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 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
- 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

- Q6) Botany: Plants::Entomology:? –  
 A) Birds  
 B) Plants  
 C) Insects  
 D) Snakes

### Sample Questions for MBACIT

- 1 C. V. Raman won the Noble Prize for  
 A) Bioscience  
 B) Chemistry  
 C) Economics  
 D) Physics
- 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
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
8. 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
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
  - A) Tamil Nadu
  - B) Orissa
  - C) Kerala
  - D) None of the above

**Component II: Economic and Business Environment Awareness**

1. A mixed economy is necessarily a \_\_\_\_\_ economy.
  - A) Controlled
  - B) Planned
  - C) Organised
  - D) None of the above
2. Which of the following internal factors influence the strategy and other decisions of the business?
  - A) Value System
  - B) Mission and objective
  - C) Management structure and nature
  - D) None of the above
3. Environment is synonymous with \_\_\_\_\_.
  - A) Task
  - B) Relations
  - C) People
  - D) Situational variables
4. Which is the full form of NTC?
  - A) National Thermal Corporation
  - B) National Textile Corporation
  - C) Non-Textile Corporation
  - D) None of the above
6. In which sector Indian Economy is growing at faster rate in 21<sup>st</sup> century (after 2000) \_\_\_\_\_.
  - A) Service
  - B) Agriculture
  - C) Manufacturing
  - D) 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%            |

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
3. What is the total number of Engineers?
  - A) 300
  - B) 350
  - C) 360
  - D) 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 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 9<sup>th</sup> from the top, S is 8<sup>th</sup> 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).

1. Which of the following statements according to the passage is correct?
  - (a) India took heed "On the week 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.
2. 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)
3. The Indian perception of the USSR was always
  - (a) Negative
  - (b) Neutral
  - (c) Counter – reactionary
  - (d) Applauding
4. 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 RBC's?  
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 Woods' is associated with:  
A) Boxing  
B) Tennis  
C) Football  
D) Golf
- Thomas Cup' 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. 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 channels 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. Biophysics

1. If A & B are vectors, then
  - A) Vector A and B are perpendicular to each other.
  - B) Vector A and B are necessarily parallel.
  - C) Vector A and B must be antiparallel.
  - D) Vector A and B may be parallel or antiparallel.
2. The minimum charge on a body can be:
  - A) one coulomb
  - B) one stat coulomb
  - C)  $1.6 \times 10^{-19}$  coulomb
  - D)  $3.2 \times 10^{-19}$  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 phi.
  - 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)  $P^H = Pk + \log R$
  - C)  $P^H = pk - \log R$
  - 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 conditions  $a \neq b \neq c$ ,  $\alpha = \gamma = 90^\circ$   $\beta \neq 90^\circ$  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
20. 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
21. 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
22. Component of atom involved in study of structure with X-ray crystallography
  - A) Nucleus
  - B) Electron
  - C) proton
  - D) Neutrons
23. The radius of an atom is approximately
  - A)  $10^{-10}$  m
  - B)  $10^{-12}$  m
  - C)  $10^{-13}$  m
  - D)  $10^{-16}$  m
24. 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
25. Antiparticle of electron is
  - A) proton
  - B) Antiproton
  - C) Positron
  - D) Neutron
26. Atomic force microscope was invented in which Year:
  - A) 1972
  - B) 1986
  - C) 2001
  - D) 1980
27. 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
28. Which out of these is not a connective tissue:
  - A) Cartilage
  - B) bone
  - C) muscle
  - D) blood
29. 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.
30. 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
12. The value of atomic mass unit is:  
 A)  $1.66 \times 10^{-27}$  Kg  
 B)  $1.66 \times 10^{-28}$  Kg  
 C)  $1.66 \times 10^{-29}$  Kg  
 D)  $1.66 \times 10^{-24}$  Kg
13. The peptide bond in protein is  
 A) Planar, but rotates to three preferred dihedral angles  
 B) Nonpolar, but rotates to the three preferred dihedral angles  
 C) Nonpolar, and fixed in a trans conformation  
 D) Planar, and usually found in a trans conformation
14. The lactoferrin is produced by:  
 A) Spermatogonia  
 B) Reticulocytes  
 C) Amebocytes  
 D) Neutrophils
15. During generation of action potential, depolarization is due to  
 A)  $k^+$  -efflux  
 B)  $Na^+$  -efflux  
 C)  $K^+$  -influx  
 D)  $Na^+$  -influx
16. Which of the following wave is likely to be absent in ECG  
 A) P  
 B) T  
 C) Q  
 D) R
17. Indirect immnuofluorescene involves fluorescently labeled  
 A) Immunoglobulin-specific antibodies  
 B) Antigen-specific antibodies  
 C) Hapten – specific antibodies  
 D) Carrier – specific antibodies
18. Prostaglandins are  
 A) C20 unsaturated fatty acids  
 B) C27 saturated alcohols  
 C) C20 saturated fatty acids  
 D) C27 unsaturated alcohols
19. Apart from the proton which other nuclei of the following is used for NMR.  
 A)  $^{13}C$   
 B)  $^{12}C$   
 C)  $^{16}O$   
 D)  $^{32}P$
31. Brunner glands are present in:  
 A) Colon  
 B) jejunum  
 C) duodenum  
 D) ileum
32. A rickshaw puller remembers a large number of places and has the ability to find shortcuts and new routes between familiar places. Which region of the brain is responsible for this?  
 A) Pituitary  
 B) Thalamus  
 C) Hypothalamus  
 D) Hippocampus
33. A Ramachandran plot show:-  
 A) The angles that are allowed between the bonds connecting the amide nitrogen in a peptide bond  
 B) The sterically limited rotational angles where phi and psii are allowed in the protein backbone.  
 C) The amino acid residues that have the greatest degrees of rotational freedom  
 D) The sterically allowed rotational angles between the side chain groups in a peptide backbone.
34. The most sensitive for the lethal effects of radiation is  
 A) Preimplantation  
 B) Early organogenesis  
 C) Late organogenesis  
 D) The fetal period
35. Which of the following is the primary factor regulating normal coronary blood flow  
 A) Aortic diastolic pressure  
 B) Coronary perfusion pressure  
 C) Systolic wall pressure  
 D) Myocardial oxygen consumption
36. The term satellite DNA refers to  
 A) extrachromosomal DNA fragments that are found closed to (orbiting) the full length chromosomes  
 B) Mitochondrial DNA, which is circular in nature  
 C) Long tandem repeats of simple DNA sequences  
 D) Mobile DNA elements such as transposons and insertion sequences
37. The number of atoms in a crystal which surrounded a particular atom as its nearest neighbours is called  
 A) Charge number  
 B) Atomic packing factor  
 C) Coordination number  
 D) Lattice
38. EPR spectrum is due to  
 A) Change in mass state of an electron  
 B) Change in L-K transition of an electron  
 C) Change in spin state of an electron  
 D) Change in both L-K transition and mass of an electron

**Sample Questions for M.Sc. Mathematics**

1. 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
  - A) 49
  - B) one
  - C) three
  - D) zero
  
2. In the ring  $Z[i]$ , where  $Z$  is the ring of integers, the element  $1 - i$ 
  - A) is both irreducible as well as prime
  - B) is neither irreducible nor prime
  - C) is irreducible but not prime
  - D) is prime but not irreducible
  
3. The equation of the tangent to the curve  $f(x, y) = 0$  at any point  $(a, b)$  is given by
  - A)  $(x - a) \frac{\partial f}{\partial y}(a, b) + (y - b) \frac{\partial f}{\partial x}(a, b) = 0$
  - B)  $(x - a) \frac{\partial f}{\partial y}(a, b) - (y - b) \frac{\partial f}{\partial x}(a, b) = 0$
  - C)  $(y - b) \frac{\partial f}{\partial y}(a, b) + (x - a) \frac{\partial f}{\partial x}(a, b) = 0$
  - D)  $(x - a) \frac{\partial f}{\partial x}(a, b) - (y - b) \frac{\partial f}{\partial y}(a, b) = 0$
  
4. 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
  - A)  $2u_1u_2 + 2v_1v_2 + 2w_1w_2 = d_1 + d_2$
  - B)  $u_1u_2 + v_1v_2 + w_1w_2 = 0$
  - C)  $\frac{u_1}{u_2} = \frac{v_1}{v_2} = \frac{w_1}{w_2} = \frac{d_1}{d_2}$
  - D)  $2(u_1 - u_2) + 2(v_1 - v_2) + 2(w_1 - w_2) = (d_1 - d_2)$
  
5. The series  $\sum \frac{1}{n(\log n)^p}$  is
  - A) convergent if  $p > 0$
  - B) convergent if  $p > 1$
  - C) divergent if  $p > 1$
  - D) convergent if  $0 < p < 1$
  
6. The integrating factor of the differential  $\frac{\partial y}{\partial x} + 2xy = 4x^3$  is
  - A)  $e^{y^2}$
  - B)  $e^{x^2}$
  - C)  $e^x$
  - D)  $e^y$
  
7. If  $\phi(x, y, z) = 3x^2y - y^3z^2$ , then  $\nabla \phi$  at the point  $(1, -2, 1)$  is
  - A)  $-12\hat{i} - 9\hat{j} - 16\hat{k}$
  - B)  $12\hat{i} + 9\hat{j} - 16\hat{k}$
  - C)  $-12\hat{i} + 9\hat{j} + 16\hat{k}$
  - D)  $-12\hat{i} + 9\hat{j} - 16\hat{k}$
  
8. If one root of the equation  $x^3 - 13x^2 + 15x + 189 = 0$  exceeds the other by 2, then all the roots are
  - A) 7, 9 and 3
  - B) -7, -9 and -3
  - C) 7, 9 and -3
  - D) -7, -9 and 3
  
9. Two forces 13 kg.wt. and  $3\sqrt{3}$  kg.wt. act on a particle at an angle  $\theta$  and equal to a resultant force of 14 kg.wt., then the angle between the forces is
  - A)  $45^\circ$
  - B)  $30^\circ$
  - C)  $60^\circ$
  - D)  $90^\circ$
  
10. 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
  - A) Zero
  - B) one
  - C) at most two
  - D) 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) Spare 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. 2-Year Course 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) Semiconductivity  
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  
C) Uniform speed  
D) It can never happen
- 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) Abscisic acid
- Sugar in chloroplast is synthesized in:  
A) Quantasomes  
B) Stroma  
C) Thylakoids  
D) Matrix

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
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. 2-Year Course (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
  - 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.
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)
  - A) AB or O
  - B) A, B, or O
  - C) A or B
  - D) A, B, AB, or O

4. A replicon is:
- an enzyme complex that replicates DNA
  - the amount of time required to duplicate a genome
  - larger in complex eukaryotes and smaller in bacteria
  - the DNA sequences that specify and are replicated by a single replication initiation event
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?
- 0.5
  - 1.0
  - 0.75
  - 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:
- 999
  - 630
  - 330
  - 111

### Sample Questions for M.Sc. 2-Year Course in Forensic Science & Criminology

#### Section A: General Science (Compulsory)

1. Which acid is produced when milk gets sour?
- Tartaric Acid
  - Butyric Acid
  - Lactic Acid
  - Acetic Acid

2. The bond which is present between water molecules is:
- Electrovalent bond
  - Covalent bond
  - Hydrogen bond
  - Vander Waalls bond

3. The number of Chromosomes pairs in Human body are :
- 23
  - 42
  - 46
  - None of above

4. The mass of the body at the centre of earth is
- Less than at the surface
  - Remains constant
  - More than the surface
  - Zero

#### Forensic Science

1. Who suggested the practical method of finger-printing and their classification
- Francis Galton
  - Henry Faulds
  - Albert Osborn
  - Calvin Goddard
2. Study of the motion of a projectile from the muzzle of the weapon to the target is
- External Ballistics
  - Terminal Ballistics
  - Internal Ballistics
  - None of the above

#### Section B: Any two of the four sub-sections

##### Biology

1. The most abundant protein on earth is
- Keratin
  - Rubisco
  - RuBP
  - Fibrinogen
2. Type of mimicry in which both the mimic and model are harmful (unpalatable) to the predator
- Batesian mimicry
  - Mullerian mimicry
  - Warning mimicry
  - Concealing mimicry

##### Chemistry

- The correct decreasing order of the boiling points is
- $\text{NH}_3 > \text{H}_2\text{O} > \text{HF}$
  - $\text{H}_2\text{O} > \text{HF} > \text{NH}_3$
  - $\text{NH}_3 > \text{HF} > \text{H}_2\text{O}$
  - $\text{HF} > \text{H}_2\text{O} > \text{NH}_3$
2. The element that shows both +3 and +4 oxidation is
- Cerium
  - Promethium
  - Gadolinium
  - Holmium

##### Physics

1. Where can Maxwell's equation be derived
- Gauss's law
  - Gauss's magnetic law
  - Faraday law
  - All the above
2. A particle executing a vibratory motion passing through mean point has
- Maximum potential energy and minimum kinetic energy
  - Maximum kinetic energy and minimum potential energy
  - Kinetic energy and potential energy

both maximum  
 D) Kinetic energy and potential energy  
 both minimum

**Sample Questions for M.Sc. Statistics**

1.  $\lim_{x \rightarrow 0} \frac{\sin(\pi \cos^2 x)}{x^2}$  is
  - (a)  $\pi$
  - (b) 1
  - (c)  $-\pi$
  - (d)  $\pi/2$
  
2. For  $x \in \mathcal{R}$ ,  $\lim_{x \rightarrow \infty} \left(\frac{x-3}{x+2}\right)^x$  is
  - (a)  $e^{-1}$
  - (b)  $e$
  - (c)  $e^{-5}$
  - (d)  $e^5$
  
3. The value of  $\int_{-1}^2 |[x] - \{x\}| dx$ , where  $[x]$  is the greatest integer less than or equal to  $x$  and  $\{x\}$  is the fractional part of  $x$  is
  - (a)  $7/2$
  - (b)  $5/2$
  - (c)  $1/2$
  - (d)  $3/2$
  
4. The value of  $\int_{1/3}^3 \frac{1}{x} \sin\left(\frac{1}{x} - x\right) dx$  is
  
5. The number of accidents per week in a small city has a Poisson distribution with mean equal to 3. The probability of exactly 2 accidents in 2 weeks is
  - (a)  $2e^{-3}$  (b)  $9e^{-3}$  (c)  $18e^{-6}$  (d)  $18e^{-3}$
  
6. The Quadratic form  $Q(x, y, z) = x^2 + 3y^2 + 2z^2$  is
  - (a) Positive definite (b) Positive semi-definite (c) Negative definite (d) Indefinite
  
7. The function
 
$$f(x) = \begin{cases} \frac{\sin x}{x} & \text{for } x \neq 0 \\ 1 & \text{for } x = 0 \end{cases}$$
 is
  - (a) continuous at  $x = 0$
  - (b) not continuous at  $x = 0$
  - (c) not differentiable at  $x = 0$
  - (d) nowhere differentiable at  $x = 0$
  
8. Let  $A$  be a  $n \times n$  real matrix. Then, which of the following statements is true?
  - (a) If the eigenvalues of  $A$  are  $\lambda_1, \dots, \lambda_n$ , then  $A$  is similar to a diagonal matrix with  $\lambda_1, \dots, \lambda_n$  along the diagonal.
  - (b) If  $\text{rank}(A) = r$ , then  $A$  has 'r' non-zero eigenvalues.
  - (c) If  $A^k = 0$  for some  $k > 0$ , then  $\text{trace}(A) = 0$ .
  - (d) If  $A$  has a repeated eigenvalue, then  $A$  is not diagonalizable.
  
9. The system of equations  $4x + 6y = 5, 8x + 12y = 10$  has:
  - (a) A unique solution
  - (b) No solution
  - (c) Infinitely many solutions
  - (d) None of the above
  
10. If two matrices  $A$  and  $B$  have the same size and the same rank, then
  - (a) they have determinant 0
  - (b) they are equivalent
  - (c)  $A$  and  $B$  have common elements.
  - (d)  $A$  and  $B$  have at least two elements common
  
11. The system  $AX = O$  in 'n' unknowns has only trivial solution if:
  - (a)  $\rho(A) > n$
  - (b)  $\rho(A) < n$
  - (c)  $\rho(A) = n$
  - (d)  $\rho(A) \geq n$
  
12. Let  $F$  and  $G$  be two events in the sample space  $S$  such that  $P(F \cup G) = .8$ ,  $P(F) = p$  and  $P(G) = .3$ . The value of  $p$  for which  $F$  and  $G$  are independent is:
  - A. .5
  - B. .6
  - C.  $2/3$
  - D.  $1/5$
  
13. The particular integral of  $(D^2 + D)y = x^2 + 2x + 4$  is
  - A.  $4x+c$
  - B.  $x^3 + 2x^2 + 4x + 4x$
  - C.  $x^3/3 + 2x^2$
  - D.  $x^3/3 + 4x$
  
14. The value of  $\int_C \frac{z-3}{z^2+2z+5} dz$ , where  $C: |Z+1-i|=2$  is:
  - A. 0
  - B.  $(i-2)$
  - C.  $\pi((i-2))$
  - D.  $\pi/2$
  
15. The residue of  $f(z) = \frac{z^2}{(z-1)^2(z+2)}$  at pole 1 is :
  - A.  $1/3$
  - B.  $5/9$
  - C.  $2/3$
  - D. 0
  
16. The complete solution of  $(x+1) dy/dx - y = e^{3x}(1+x^2)$  is :
  - A.  $-1/(x+1)$
  - B.  $1/(x+1)$
  - C.  $(e^{3x}/3 + c)(1+x)$
  - D.  $(e^{3x}/3 + c)$

17. The solution of  $p = \sin(y - px)$ , where  $p = dy/dx$ , is

- A.  $px + \sin^{-1}p$    B.  $cx + \sin^{-1}c$    C.  $cx$   
D.  $\sin^{-1}c$

18. The value of  $k$  for which the area under the curve  $f(x) = k(y+1)$ ,  $2 < y < 4$  and zero otherwise, will be one is:

- A.  $1/8$    B.  $8$    C.  $1$    D.  $3/4$

19. The value of  $\int_0^{\infty} xe^{-x/2} dx$  is:

- A.  $2$    B.  $1$    C.  $4$    D.  $1/2$

20. A person selects two items randomly, one by one without replacement, from a lot containing 4 defective and 6 non-defective items. The probability that second drawn item will be defective given that first was non defective is:

- A.  $4/15$    B.  $6/25$    C.  $4/9$    D.  $4/10$

21. Random variable  $X$  follows Poisson distribution such that  $3P[X = 1] = 2P[X = 2]$ . The mean of  $X$  is:

- A.  $2$    B.  $3$    C.  $3/2$    D.  $1$



## Sample Questions for M.Sc. Geology

1. A Sandstone containing of at least 25% Feldspar is :
  - A) Orthoquartzite
  - B) Arkose
  - C) Graywacke
  - D) Sublithic Wacke
2. An intergrowth texture in which plagioclase contains inclusion of potash feldspar is known as :
  - A) Perthite
  - B) Antiperthite
  - C) Graphic
  - D) Seriate
3. Which of the following rock is not of metamorphic origin:
  - A) Slate
  - B) Phyllite
  - C) Schist
  - D) Shale
4. Mica Plate gives the retardation of:
  - A) 1 Lameda
  - B)  $\frac{1}{2}$  Lameda
  - C)  $\frac{1}{4}$  Lameda
  - D) Variable retardation
5. Which of the following mineral is Aluminosilicate:
  - A) Quartz
  - B) Garnet
  - C) Biotite
  - D) Sillimanite, Robins, Crows

## Sample Questions for M.Sc. (Stem Cell & Tissue Engineering)

1. Cholera spreads due to
  - A. Air pollution
  - B. Line sources
  - C. Humid weather
  - D. Water pollution
2. Type of immunoglobulin present in tears is
  - A. IgA
  - B. IgG
  - C. IgD
  - D. IgE
3. Cofactor is generally
  - A. protein
  - B. vitamin
  - C. sugar
  - D. lipid
4. The enzyme which joins two DNA molecules is called
  - A. DNA Ligase
  - B. DNA polymerase
  - C. protease
  - D. kinase
5. Ribosomes are attached to Endoplasmic Reticulum (ER). This ER is called
  - A. Rough ER
  - B. smooth ER
  - C. ribozyme
  - D. ribonuclease
6. The lysosomes are organelle of the cell. They .....
  - A. contain hydrolytic enzymes
  - B. are called power house of the cell
  - C. contain DNA
  - D. contain RNA
7. Fluid-mosaic hypothesis was proposed by
  - A. Danielli Robertson
  - B. Singer and Nicolson
  - C. Davson
  - D. Robertson
8. Which of the following is a sugar molecule?
  - A. Glucose
  - B. Glycine
  - C. palmitic acid
  - D. adenine
9. Leaf pigments are separated from a mixture by
  - A. Spectrophotometry
  - B. Chromatography
  - C. Autoradiography
  - D. SDS-PAGE
10. The cause of diabetes is
  - A. Insulin deficiency
  - B. Glucose deficiency
  - C. Presence of glucose in urine
  - D. Bacterial infection
11. Kidney plays an important role in the following process
  - A. secretion of pepsin
  - B. excretion
  - C. contraction
  - D. respiration
12. The chromosomes are aligned at the equatorial plate of the cell during which stage of mitosis?
  - A. prophase
  - B. metaphase
  - C. anaphase
  - D. telophase

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

- Which one of the following processes refers to removal of only pathogenic organisms from an animate surface?
  - Disinfection
  - Antisepsis
  - Tyndallization
  - Inspissation
- Under conditions of antigen excess, the complexes between IgA and a tetravalent antigen will have the composition
  - Ag<sub>2</sub>Ab<sub>1</sub>
  - Ag<sub>4</sub>Ab<sub>1</sub>
  - Ag<sub>4</sub>Ab<sub>3</sub>
  - Ag<sub>2</sub>Ab<sub>7</sub>
- Ebola is a
  - Haemorrhagic fever of humans and other primates caused by ebolaviruses
  - Prion disease of primates and humans
  - Equine botulism syndrome caused by unknown aetiological agent
  - Bacterial febrile illness that leads to sudden death
- Which of the following chromatography techniques can be used to separate a protein that binds strongly to its substrate incorporated onto a column?
  - Size-exclusion chromatography
  - Ion exchange chromatography
  - Affinity chromatography
  - Partition chromatography
- The N<sub>2</sub> fixation reaction catalysed by the enzyme nitrogenase is a high energy demanding reaction that requires approximately
  - 12 ATP
  - 25 ATP
  - 18 ATP
  - 7 ATP
- In light microscopy, if the wavelength of the light illuminating a sample is increased the resolving limit and the resolving power of the microscope will \_\_\_\_\_ and \_\_\_\_\_ respectively.
  - Increase; Increase
  - Increase; Decrease
  - Decrease; Increase
  - Decrease; Decrease
- The affinity of an enzyme for its substrate, when the enzyme has a K<sub>m</sub> of 0.50mM will be than the affinity of an enzyme for its substrate when the enzyme has a K<sub>m</sub> of 0.05mM.
  - Half
  - Greater
  - Lesser
  - Equal
- For recovering citric acid from culture medium after the fermentation, Ca(OH)<sub>2</sub> is added to the slurry to
  - Precipitate calcium carbonate
  - Precipitate calcium sulphate
  - Precipitate calcium phosphate
  - Precipitate calcium citrate
- Chronic granulomatous disease arises due to defects in the
  - Monocytes and neutrophils
  - T cells
  - B cells
  - RBCs
- Cathepsin G is a marker for
  - Mitochondria
  - Chloroplast
  - Lysosomes
  - Golgi bodies

### Sample Questions for M.Sc. Biotechnology

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

### Sample Questions for M.Sc. Botany

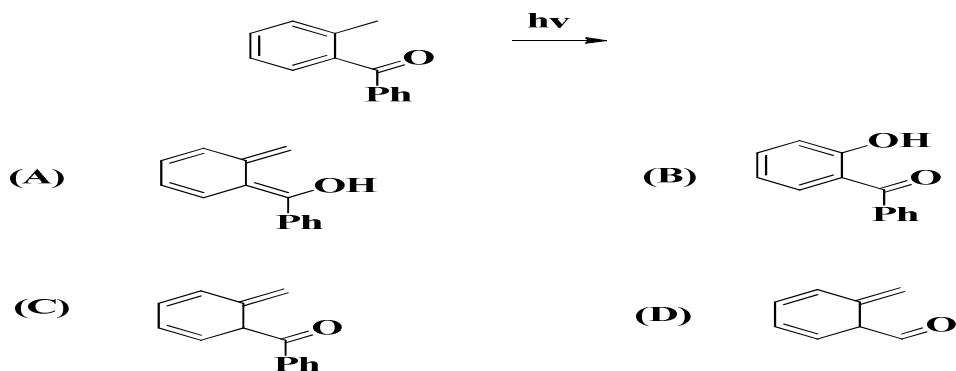
- In  $C_4$  plants the first  $CO_2$  acceptor is :
  - Ribulose – 1,5-bisphosphate
  - Phosphoenol pyruvate
  - Pyruvate
  - Ribulose-5-phosphate
- In majority of angiosperms, the female gametophyte at the time of fertilization is :
  - 8-celled
  - 7-celled
  - 6-celled
  - 4-celled
- Agar-agar is extracted from which of the following genera
  - Gracilaria*
  - Dictyota*
  - Ectocarpus*
  - Laminaria*
- Black rust of wheat is caused by :
  - Ustilago tritici*
  - Puccinia graminis tritici*
  - Protomyces macrosporus*
  - Albugo candida*
- Oomycota is a phylum in kingdom:
  - Fungi
  - Chromista
  - Protozoa
  - Mycota
- Cystidium is a
  - Sterile element occurring in the hymenium of certain Basidiomycetes
  - Reproductive organ of a green alga
  - Fertile part of lichen thallus
  - 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?
  - Cylothallus mirabilis*
  - Funaria hygromitrica*
  - Concephalum conium*
  - Pellia epiphylla*
- Somaclonal variations are:
  - Variations produced during tissue culture
  - Variations produced during sexual reproduction
  - Variations caused by mutagenic chemicals
  - Variations caused by Gamma rays
- Trisomic condition is expressed as
  - $2n-1$
  - $2n-2$
  - $2n+1$
  - $2n+2$
- The functional unit in ecology is the:
  - Organism
  - Biosphere
  - Ecosystem
  - Population

### Sample Questions for M.Sc. Chemistry

1. Phenolic esters on heating with  $AlCl_3$  gives o- and p- acyl phenol. This is termed as:

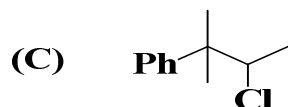
- |                            |                            |
|----------------------------|----------------------------|
| (A) Favorski rearrangement | (B) Beckmann rearrangement |
| (C) Fries rearrangement    | (D) Wolff rearrangement    |

2. Product of the rapid photochemical reaction of following aromatic compound is:



3. With the molecular formula  $C_9H_{11}Cl$  assign the plausible structure to the compound from the following sets of NMR data:

- Quintet ( $\delta$  2.15) 2H
- Triplet ( $\delta$  2.75) 2H
- Triplet ( $\delta$  3.38) 2H
- Singlet ( $\delta$  7.22) 5H



4. Ozonolysis of butan-1-ene followed by reduction with Zn / CH<sub>3</sub>COOH gives:

- (A) Acetaldehyde and formaldehyde      (B) Acetaldehyde and acetone  
(C) Acetone and formaldehyde      (D) Propionaldehyde and formaldehyde

5. The equilibrium constant of a reaction doubles on raising the temperature from 25 °C to 35 °C. Calculate  $\Delta H^\circ$  for the reaction (in KJ mol<sup>-1</sup>):

- (A) 52.89      (B) 0  
(C) 60.5      (D) 46.3

6. No. of vibrational degree of freedom in benzene:

- (A) 6      (B) 2  
(C) 31      (D) None of the above

7. What is the constant volume heat capacity of an ideal monoatomic gas (in unit J K<sup>-1</sup> mol<sup>-1</sup>)?

- (A) 12.47      (B) 6.1  
(C) 0      (D) Infinite

8. Average kinetic energy of the gas molecules at temperature, T is:

- (A)  $\frac{2}{3} RT$       (B)  $\frac{2}{3} N_0 kT$   
(C)  $\frac{3}{2} N_0 RT$       (D)  $\frac{3}{2} N_0 kT$

9. (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>Zn on reaction with acetyl chloride gives:

- (A) Butane      (B) Butanoic acid  
(C) Butanone      (D) Butene

10. Which of the following combination of orbitals is not permissible?

- (A) n = 3, l = 2, m = 0, s = -1/2      (B) n = 5, l = 0, m = 0, s = 1/2  
(C) n = 2, l = 1, m = 0, s = 1/2      (D) n = 4, l = 3, m = -3, s = 0

11. Calculate the effective nuclear charge at the outer boundary of copper atom:

- (A) 3.85      (B) 4.35  
(C) 1.3      (D) 13.05

12. Which of the following has highest ionic mobility in aqueous solution?

- (A) Li<sup>+</sup>      (B) Na<sup>+</sup>  
(C) K<sup>+</sup>      (D) Cs<sup>+</sup>

**Sample Questions for M.Sc. Physics/ Physics (Specialisation in Electronics)/ M.Sc. (2 Year course) Medical Physics**

- Two electrons move in opposite directions at 0.70 c 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) 1.00 c
- 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.
- 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<sub>z</sub> can have discrete values.  
D) An electron has magnetic dipole moment.

3. 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
  
4. Two of maxwell's equations contain an integral over a closed surface. For them the infinitesimal vector area  $dA$  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.
  
5. For the domestic ac supply of 220V, the breakdown voltage of a diode should be:
  - A) 130V
  - B) 163V
  - C) 220V
  - D) 330V
  
8. 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.
  
9. 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.
  
10. 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. Zoology

- Which of the following types of DNA replication or repair systems is dysfunctional in individuals with Xeroderma pigmentosum?
  - Mismatch repair
  - Base excision repair
  - Nucleotide excision repair
  - DNA helicase
- The part of the embryo from which ectoderm, endoderm and mesoderm are formed in chick is known as
  - Primitive streak
  - Hypoblast
  - Cytotrophoblast
  - Epiblast
- N-linked oligosaccharides on secreted glycoproteins are attached to
  - Nitrogen atoms in the polypeptide backbone
  - The serine or threonine in the sequence Asn-X-Ser/Thr
  - The amino terminus of the protein
  - The asparagines in the sequence Asn-X-Ser/Thr
- Which of the following in star fish can turn inside out?
  - Madreporite
  - Stone canal
  - Tube feet
  - Cardiac stomach
- Antennae in hymenoptera, diptera and odonata are
  - Short & filiform, aristate, geniculate respectively
  - Short & filiform, geniculate, aristate respectively
  - Geniculate, aristate, short & filiform respectively
  - Aristate, geniculate, short & filiform respectively
- Which of the following genus is the blood fluke of man and other animals?
  - Schistosoma
  - Ophisthorchis (Clonorchis)
  - Paragonimus
  - Diplozoon
- Populations that are morphologically similar but do not interbreed for physiological or behavioral reasons are grouped as
  - Races
  - Varieties
  - Sub-species
  - Sibling species
- The cranial capacity of which prehistoric human was almost the same as that of the modern man?
  - Neanderthal man
  - Peking man
  - Java ape man
  - Australopithecus man
- An example of competitive inhibition of an enzyme is the inhibition of
  - Succinic dehydrogenase by malonic acid
  - Cytochrome oxidase by cyanide
  - Hexokinase by glucose 6 phosphate
  - Carbonic anhydrase by carbon dioxide
- The isoelectric point of a protein is defined as
  - The pH at which the net charge on the molecule is zero
  - The pH at which all groups are protonated
  - The pH at which all groups are unprotonated
  - The pH at which each acidic groups is protonated and each basic groups is unprotonated.