

SAMPLE QUESTIONS

Sample Questions for LL.M.

Part – I: Constitutional Law and Current Affairs

1. The doctrine of "Basic Structure of the Constitution" was propounded by the Supreme Court of India in
 - A) Shankari Prasad v. Union of India, AIR 1951 SC 458
 - B) Golaknath v. State of Punjab, AIR 1967 SC 1643
 - C) Kesavananda v. State of Kerala, AIR 1973 SC 1461
 - D) Minerva Mills v. Union of India, AIR 1980 SC 1789
2. The President of India may make a proclamation under Article 356 as to the breakdown of constitutional machinery in a State.
 - A) When he is personally satisfied as to them circumstances.
 - B) When he is advised by the Prime Minister to do so.
 - C) When he is advised by the Union Council of Ministers.
 - D) When he receives a report from the Chief Election Commission.
3. The President of India, in the matters of appointment of Judges of a High Court :
 - A) Is not obliged to consult any Judge of Supreme Court or High Court.
 - B) Is bound by the advice of the Governor of a State
 - C) Must give primacy to the opinion of the Chief Justice of India.
 - D) Is not bound to consult the Chief Justice of India.
4. Right to education has been included in the constitution by
 - A) 86th Amendment
 - B) 100th Amendment
 - C) 87th Amendment
 - D) 94th Amendment
5. Ordinance can be promulgated by the president of India if,
 - A) Both the Houses of Parliament are in session
 - B) Both the Houses of Parliament are not in session
 - C) Either of the Houses is not in session.
 - D) None of the above.
6. How many amendments have been carried out in constitution of India?
 - A) 109
 - B) 106
 - C) 99
 - D) 94
7. Constitution 103rd Amendment has amended which articles of the Constitution?
 - A) 14 & 15 B) 15 & 16
 - C) 14 & 16 D) 14, 15 & 16
8. 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?
 - A) 302
 - B) 303
 - C) 304
 - D) 309
9. The newly elected President of USA Barack Obama belongs to which political party.
 - A) Republican
 - B) Democratic.
 - C) Communist
 - D) None of the above
10. Since August 1994, the rupee has been made fully convertible in :
 - A) The capital account
 - B) The capital and saving account
 - C) The saving account
 - D) 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)

1. Which of the following is NOT a language processor?
A) Compiler
B) Loader
C) Interpreter
D) Assembler
2. Which of the following is NOT an Internet protocol?
A) LTP
B) SMTP
C) HTTP
D) ATM
3. 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
4. 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
5. If the word MANMOHANWASHERE corresponds to ZOAABVNBJOFRFR, then the word that corresponds to LRF is
A) HEY
B) MAN
C) GOT
D) YES
6. 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
7. The remainder obtained on dividing 2^{1680} by 1763 is
A) 1
B) 3
C) 13
D) 31
8. 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) $4/3$
9. 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) Mushfiquir 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) 9 th	B) 13 th
C) 24 th	D) 36 th
 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 was Rishi Kapoor's first film as a lead actor?
 - A) Mera Naam Joker.
 - B) Bobby
 - C) Karz
 - D) Amar, Akbar Anthony
 2. The Ashes is associated with the game of

A) Football	B) Volley Ball
C) Cricket	D) Hockey

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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 and 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 barchan?
 - 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, its 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 = $\frac{\text{distance on the map}}{\text{distance on the ground}}$
 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. Which of the following are features of reference group behaviour
 - a) Comparison
 - b) Appraisal
 - c) Emulation
 - d) Rejection
2. When a person believes that his culture is superior to other cultures, it is called
 - a) Ethnicity
 - b) Ethnocentrism
 - c) Cultural snobbery
 - d) Cultural relativism
3. Role learning is the part of
 - a) Learning
 - b) Rebuke condition
 - c) Socialisation
 - d) Reduction change
4. Which changes are considered due to Socialisation?
 - a) Maturational changes
 - b) Attitudinal Changes
 - c) Physical Changes
 - d) Common Changes
5. Which schedule of the Indian Constitution is enacted to protect Tribal interests?
 - a) 5th & 6th
 - b) Only 5th
 - c) Only 6th
 - d) None of these
6. PESA enacted in 1996 empowers
 - a) Gram Sabha
 - b) Gram Panchayat
 - c) Block Officers
 - d) None of these
7. Poverty has
 - a) Economic dimensions
 - b) Social dimensions
 - c) Both A and B
 - d) None of these
8. _____ was reoriented as WTO in 1995
 - (a) IBRD
 - (b) UNCTAD
 - (c) GATT
 - (d) None of these
 - (e)
9. The National Policy for Women was adopted in the year
 - (a) 1999
 - (b) 2000
 - (c) 2001
 - (d) 2002
10. The unemployment rate, according to Ministry of Labour in 2011 was?
 - (a) 3.2%
 - (b) 3.4%
 - (c) 3.6%
 - (d) 3.8%

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
- 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:
 - 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?
 - 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
 - A) target costing
 - B) life cycle costing
 - C) ABC
 - D) benchmarking
- The first Factories Act was enacted in
 - 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
 - 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
 - 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
 - A) 30 months
 - B) 24 months
 - C) 36 months
 - D) 48 months
- When an oligopolist individually chooses its level of production to maximize its profits, it charges a price that is
 - A) more than the price charges by either monopoly or a competitive market
 - B) less than the price charges by either monopoly or a competitive market
 - C) more than the price charges by a monopoly and less than the price charges by a competitive market
 - D) less than the price charges by a 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
 - 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)
 - 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?
 - A) M1 = currency with public + demand deposits with banks
 - B) M2 = M1 + post office savings deposit
 - C) M3 = M1 + M2
 - D) M4 = M3 + total post office deposits
- What is meant by the term functional management?
 - A) A system of business organization that is based on an individual having a wide range of skills needed to administer a business
 - B) A type of management that is based more on personality
 - C) A system that groups together various jobs and is organized by departments, sections, or functions
 - D) A system that supports a flat form of command chain
- Maslow, in his triangle of human needs, showed that
 - A) Having challenging new tasks is a basic human need
 - B) Money always motivates workers
 - C) Safety and security is a low order human need
 - D) 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

A)

A)

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

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
2. Which was the first Capital of Pakistan?
 - A) Karachi
 - B) Lahore
 - C) Islamabad
 - D) Peshawar
 3. 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
 4. 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
5. In which sector Indian Economy is growing at faster rate in 21st 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%
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- 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
- What is the total number of unemployed Graduates?
A) 425
B) 475
C) 550
D) 600
- What is the total number of Engineers?
A) 300
B) 350
C) 360
D) 400
- 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

- 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
- 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
- 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
- In a class M is 9th from the top, S is 8th from the bottom and R is exactly in between them. If there are three children between M and R, find out the total students
A) 24
B) 25
C) 23
D) 27
- 3, 5, 9, 17, 13, _____
A) 44
B) 65
C) 64
D) 49

Component V: Verbal Ability and Reasoning

- 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 weak faults of Russian policies and system.
 (b) India seriously commended the achievement of Russian, i.e. cent per cent literacy and rapid industrialization.
 (c) The process of industrialization had already started when Russian revolution took place in 1917.
 (d) The literature, art and music received a setback during the communist regime in Russia.
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)
1. The Indian perception of the USSR was always
 (a) Negative
 (b) Neutral
 (c) Counter – reactionary
 (d) Applauding
2. The passage is
 (a) Descriptive

- (b) Paradoxical
- (c) Analytical
- (d) Thought provoking

Sample Questions for M.P. Ed.

1. India played hockey for the first time on Olympic Games in:
 - A) 1924, Paris (France)
 - B) 1928, Amsterdam
 - C) 1932, Los Angeles (USA)
 - D) 1936, Berlin (Germany)
2. "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
3. 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
4. The Sacrum consists of:
 - A) 3 Vertebrae
 - B) 4 Vertebrae
 - C) 5 Vertebrae
 - D) 7 Vertebrae
5. The chief sources of vitamin A is:
 - A) Banana
 - B) Egg
 - C) Carrot
 - D) Guava
6. What is the stick used in snooker called:
 - A) A Cue
 - B) Heave
 - C) Paddle
 - D) Togo
7. "Shivanthi Gold Cup" is associated with the game of:
 - A) Hockey
 - B) Football
 - C) Volleyball
 - D) Badminton
8. What is the normal life span of RBC's?
 - A) 60 days
 - B) 90 days
 - C) 120 days
 - D) 150 days
9. Chronological age is calculated with the help of
 - A) Mental qualities
 - B) X-rays
 - C) Calendar Years
 - D) Organs and secretions
10. YMCA College of Physical Education (Madras) was established in:
 - A) 1956
 - B) 1920
 - C) 1931
 - D) 1932

Sample Questions for B.P. Ed.

1. The 'Santosh Trophy' tournament first began in:
 - A) 1940
 - B) 1941
 - C) 1942
 - D) 1945
2. Who is the first teacher of a child?
 - A) Teacher
 - B) His Parents
 - C) His environment
 - D) His own conscious mind
3. The first Modern Olympic games were held in the Year:
 - A) 1892
 - B) 1896
 - C) 1900
 - D) 1904
4. Find the odd personality:
 - A) Baichung Bhutia
 - B) Kapil Dev
 - C) Pete Sampras
 - D) Jarnail Singh
5. 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
6. Which one of the following is different from the rest of the three?
 - A) Football
 - B) Basketball
 - C) Cricket
 - D) Tennis
7. The name of 'Tiger Woods' is associated with:
 - A) Boxing
 - B) Tennis
 - C) Football
 - D) Golf
8. Thomas Cup is associated with:
 - A) Badminton (women)
 - B) Badminton (men)
 - C) Table Tennis (women)
 - D) Table Tennis (men)
9. Most important component of level of living is?
 - A) Health
 - B) Occupation
 - C) Education
 - D) Housing
10. 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

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

Sample Questions M.Tech Instrumentation

1. If an atom loses one or more electrons it becomes
 - a) Electrically neutral
 - b) Electrically positive
 - c) Electrical activist
 - d) A neutral ion
2. The superposition theorem is applicable to
 - a) Voltage
 - b) Current
 - c) Both voltage and current
 - d) Voltage Current and Power
3. When is the bridge circuit balanced?
 - a) When voltage is applied
 - b) When current flows through the opposite ends of the bridge circuit
 - c) When no current flows through the galvanometer
 - d) When impedance is minimum
4. Transformers are rated
 - a) kW
 - b) kV
 - c) kWh
 - d) kVA
5. A Step function is applied to the input of a system and output is of the form $y=t$, the system is
 - a) Stable
 - b) Unstable
 - c) Not necessarily stable
 - d) Conditionally stable
6. How many 7490 ICs are to be cascaded to count up to 999?
 - a) 01
 - b) 02
 - c) 03
 - d) 04

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) 1.6×10^{-19} coulomb
 - D) 3.2×10^{-19} coulomb
3. The potential due to an electric dipole varies
 - A) inversely as the distance
 - B) directly as the distance
 - C) inversely as the square of distance
 - D) directly as the square of distance
4. Which of these techniques does not give information about the dimensions of DNA molecule?
 - A) Viscosity measurement
 - B) light scattering
 - C) flow-birefringence
 - D) Atomic Absorption spectroscopy
5. Fluorescence of a protein can be due to
 - A) tryptophan
 - B) tyrosine
 - C) phenylalanine
 - D) all the above
6. The aromatic amino acids are important because:
 - A) they are ionized by light of wavelength 280nm.
 - B) they are actually imino acids that cannot rotate through the angle ϕ .
 - C) they give proteins their absorbance at 280 nm
 - D) they are source of disulfide bonds within the exported proteins
7. The Henderson-Hasselbalch equation states that:
 - A) $P^k = P^H + \log R$
 - B) $P^H = P^k + \log R$
 - C) $P^H = P^k - \log R$
 - 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 auditions $a \neq b \neq c$, $\alpha = \gamma = 90^\circ$ $\beta \neq 90^\circ$ describe theUnit 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 identity 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) 1.66×10^{-27} Kg
 - B) 1.66×10^{-28} Kg
 - C) 1.66×10^{-29} Kg
 - D) 1.66×10^{-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

- 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
- In the ring $\mathbb{Z}[i]$, where $\mathbb{Z}$ 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
- 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) $(x - a) \frac{\partial f}{\partial x}(a, b) - (y - b) \frac{\partial f}{\partial y}(a, b) = 0$
- 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) $2(u_1 - u_2) + 2(v_1 - v_2) + 2(w_1 - w_2) = (d_1 - d_2)$
- 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 $0 < p < 1$
- The integrating factor of the differential $\frac{\partial y}{\partial x} + 2xy = 4x^3$ is given by
 (A) e^{y^2}
 (B) e^{x^2}
 (C) e^x
 (D) e^y
- If $\phi(x_1, y_1, z_1) = 3x^2y - y^3z^2$, then $\nabla \phi$ at the point $(1, -2, 1)$ is
 (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) $-12\hat{i} + 9\hat{j} - 16\hat{k}$
- 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
- Two forces 13 kg.wt. and $3\sqrt{3}$ kg.wt. act on a particle at an angle θ and equal to a resultant force of 14 kg.wt., then the angle between the forces is
 (A) 45°
 (B) 30°
 (C) 60°
 (D) 90°
- Let W_1 and W_2 be subspaces of dimensions 5 and 4 respectively of a vector space V of dimension 6. Then $\dim(W_1 \cap W_2)$ is
 (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) Absciscic 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:
 - A) an enzyme complex that replicates DNA
 - B) the amount of time required to duplicate a genome
 - C) larger in complex eukaryotes and smaller in bacteria
 - D) the DNA sequences that specify and are replicated by a single replication initiation event
9. A woman with an X-linked dominant disorder mates with a phenotypically normal male. On average, what proportion of this couple's daughters will be affected with the disorder?
 - A) 0.5
 - B) 1.0
 - C) 0.75
 - D) 0.25
10. A messenger acid is 336 nucleotides long, including the initiator and termination codons. The number of amino acids in the protein translated from this mRNA is:
 - A) 999
 - B) 630
 - C) 330
 - D) 111

Sample Questions for M.Sc. 2-Year Course (Instrumentation)

1. Maximum volume of blood at a given time is found in the
 - a) Heart
 - b) Capillaries
 - c) Venules and veins
 - d) Aorta
2. Zener diodes are also known as
 - a) Voltage regulators
 - b) Forward bias diode
 - c) Breakdown diode
 - d) Power Amplifier
3. When is the bridge circuit balanced?
 - a) When voltage is applied
 - b) When current flows through the opposite ends of the bridge circuit
 - c) When no current flows through the galvanometer
 - d) When impedance is minimum
4. What do we call the temperature and pressure at which solid, liquid, and vapor phases of a particular substance coexist in equilibrium?
 - [A] Equilibrium point
 - [B] Triple point
 - [C] Normal point
 - [D] Break Point
5. What is rectifier used for?
 - [A] for converting alternating current into direct current
 - [B] for converting direct current into alternating current
 - [C] for increasing the power of signal
 - [D] for decreasing the voltage
6. Which of the following polymer is obtained by the condensation reaction between ethylene glycol and terephthalic acid?
 - [A] Terelene
 - [B] PMMC
 - [C] PVC
 - [D] PVA

Sample Questions for M.Sc. 2-Year Course in Nuclear Medicine

1. We can't produce colors with white light through:
 - A) Interference
 - B) Polarization
 - C) Diffraction
 - D) Dispersion
2. Methods of Fourier Transformation are applied in
 - A) Nuclear Magnetic Resonance
 - B) X-ray crystallography
 - C) Medical Imaging
 - D) All of the above
3. Which one of the following is correctly
 - A) Interference
 - B) Polarization
 - C) Diffraction
 - D) Dispersion
6. Macrophage – like cells in the connective tissue are
 - A) Osteoclasts
 - B) Mesangial cells
 - C) Histocytes
 - D) Microglial cells
7. Zinc finger proteins and helix-turn-helix proteins are:
 - A) Types of DNA-binding proteins
 - B) Involved in the control of translation
 - C) Components of ribosomes
 - D) Part of the hemoglobin in blood cells

- matched?
- Chloroplast – storage of enzymes
 - Lysosome – powerhouse of cell
 - Nucleolus – site of ribosomal synthesis
 - Glyoxysome – structural support of cell
- Which amino acid can stabilize protein structure by forming covalent cross links between polypeptide chains?
 - Ser
 - Gly
 - Glu
 - Cys
 - In CT imaging the phenomenon used is
 - Radiation absorption
 - Radiation damage
 - Free radical formation
 - Radiation fluorescence
 - Transcription of DNA into mRNA is catalyzed by
 - DNA polymerase
 - RNA synthetase
 - RNA polymerase
 - Rnase
 - Which nitrogenous bases is NOT found in DNA?
 - Thymine
 - Uracil
 - Adenine
 - guanine
 - How would the complementary strand of DNA appear if the original strand of DNA contained the bases T-A-G-C in the order?
 - U-A-C-G
 - G-C-A-T
 - T-A-C-G
 - A-T-C-G

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

Section A: General Science (Compulsory)

- Which acid is produced when milk gets sour?
 - Tartaric Acid
 - Butyric Acid
 - Lactic Acid
 - Acetic Acid
- The bond which is present between water molecules is:
 - Electrovalent bond
 - Covalent bond
 - Hydrogen bond
 - Vander Waals bond
- The number of Chromosomes pairs in Human body are :
 - 23
 - 42
 - 46
 - None of above
- 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

- Who suggested the practical method of finger-printing and their classification
 - Francis Galton
 - Henry Faulds
 - Albert Osborn
 - Calvin Goddard
- 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

- The most abundant protein on earth is
 - Keratin
 - Rubisco
 - RuBP
 - Fibrinogen
- 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
- $\text{NH}_3 > \text{H}_2\text{O} > \text{HF}$
 - $\text{H}_2\text{O} > \text{HF} > \text{NH}_3$
 - $\text{NH}_3 > \text{HF} > \text{H}_2\text{O}$
 - $\text{HF} > \text{H}_2\text{O} > \text{NH}_3$
- The element that shows both +3 and +4 oxidation is
 - Cerium
 - Promethium
 - Gadolinium
 - Holmium

Physics

- Where can Maxwell's equation be derived
 - Gauss's law
 - Gauss's magnetic law
 - Faraday law
 - All the above
- 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

Sample Questions for M.Sc. Statistics

1. $\lim_{x \rightarrow 0} \frac{\sin(\pi \cos^2 x)}{x^2}$ is
 - (a) π
 - (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. $x^3 + 2x^2 + 4x$
 - C. $x^3/3 + 2x^2 + 4x$
 - 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. $(e^{3x}/3 + c)$

both maximum
D) Kinetic energy and potential energy
both minimum

17. The solution of $p = \sin(y - px)$, where $p = \frac{dy}{dx}$, 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 $\int_0^{\infty} x e^{-x/2} dx$ 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 $3 P[X = 1] = 2 P[X = 2]$. The mean of X is:
 A. 2 B. 3 C. $3/2$ D. 1

Sample Questions for M.Sc. in Renewable Energy and Smart Materials

- What is the elemental composition of fullerene?
 (a) C, O, H
 (b) C
 (c) C, N, Si
 (d) Si, Mo, S
- Which of the following nanomaterials (minerals) are frequently employed in sunscreens?
 (a) TiO_2 and ZnO
 (b) TiO_2 and UO_2
 (c) UO_2 and ZnO
 (d) ZrO_2 and Ag_2O
- FTIR spectrum of a molecule shows a peak in the region $3000\text{--}3600\text{ cm}^{-1}$. What is the most likely stretching of a functional group?
 (a) O-O str
 (b) O-H str
 (c) C-O str
 (d) C-N str
- Why an absorption band is noticed from a molecule in Ultraviolet and Visible Spectroscopy, rather than absorption lines?
 (a) Presence of several functional groups in the molecule
 (b) Variation in the electronic transition
 (c) Electronic transition is always accompanied by vibrational and rotational effects
 (d) Single transition is not possible.
- What are the general modes of operation of atomic force microscopy (AFM)?
 (a) Contact and tapping modes
 (b) Magnetic and electric modes
 (c) Electric and tapping modes
 (d) Magnetic and tapping modes.
- Benzenium ion** (C_6H_7^+) ion is a relatively stable system due to:
 (a) Breaking of aromatic system
 (b) Delocalization effect
 (c) Formation of a new bond on addition of H^+
 (d) None of the above
- If a molecular ion peak of a molecule from the corresponding mass spectrum is observed at $m/z = 78$, what is the most likely molecule?
 (a) C_6H_{14}
 (b) C_6H_{12}
 (c) C_6H_6
 (d) None of the above
- FT-IR spectroscopy is a useful tool to detect functional groups which is based on:

- (a) Molecular rotations of a particular bond
 - (b) Molecular vibrations
 - (c) Nuclear magnetic resonance
 - (d) Fragmentation of molecules.
9. Which of the following technique is based on spin of protons?
- (a) Nuclear Magnetic Resonance (NMR)
 - (b) Electron Paramagnetic Resonance (EPR)
 - (c) Both 'a' and 'b'
 - (d) Mössbauer spectroscopy.
10. Michaelis-Menten equation is derived for
- (a) Protein folding kinetics
 - (b) Homogeneous and heterogeneous catalysis
 - (c) Enzyme kinetics
 - (d) None of the above.
11. The square of the magnitude of the wave function is called
- (a) Current density.
 - (b) Zero density.
 - (c) Probability density.
 - (d) Volume density
12. The attractive force binding the proton and neutron in the nucleus of the atom is known as:
- (a) Nuclear force
 - (b) Coulumb force
 - (c) Electromagnetic force
 - (d) Electromotive force
13. Boolean algebra is essentially based on:
- (a) Symbols
 - (b) logic
 - (c) Truth
 - (d) Numbers
14. When used in a circuit, the Zener diode is always
- (a) Forward-biased
 - (b) connected in series
 - (c) troubled by overheating
 - (d) Reverse-biased
15. Working of transformer essential depends on
- (a) self-induction
 - (b) mutual induction
 - (c) Magnetic circuit
 - (d) Magnetic flux

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

1. Which one of the following processes refers to removal of only pathogenic organisms from an animate surface?

- A. Disinfection
 - B. Antisepsis
 - C. Tyndallization
 - D. Inspissation
2. Under conditions of antigen excess, the complexes between IgA and a tetravalent antigen will have the composition
 - A. Ag2Ab1
 - B. Ag4Ab1
 - C. Ag4Ab3
 - D. Ag2Ab7
3. Ebola is a
 - A. Haemorrhagic fever of humans and other primates caused by ebolaviruses
 - B. Prion disease of primates and humans
 - C. Equine botulism syndrome caused by unknown aetiological agent
 - D. Bacterial febrile illness that leads to sudden death
4. Which of the following chromatography techniques can be used to separate a protein that binds strongly to its substrate incorporated onto a column?
 - A. Size-exclusion chromatography
 - B. Ion exchange chromatography
 - C. Affinity chromatography
 - D. Partition chromatography
5. The N_2 fixation reaction catalysed by the enzyme nitrogenase is a high energy demanding reaction that requires approximately
 - A. 12 ATP
 - B. 25 ATP
 - C. 18 ATP
 - D. 7 ATP
6. 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.
 - A. Increase; Increase
 - B. Increase; Decrease
 - C. Decrease; Increase
 - D. Decrease; Decrease
7. The affinity of an enzyme for its substrate, when the enzyme has a K_m of 0.50mM will be than the affinity of an enzyme for its substrate when the enzyme has a K_m of 0.05mM.
 - A. Half
 - B. Greater
 - C. Lesser
 - D. Equal
8. For recovering citric acid from culture medium after the fermentation, $Ca(OH)_2$ is added to the slurry to
 - A. Precipitate calcium carbonate
 - B. Precipitate calcium sulphate
 - C. Precipitate calcium phosphate
 - D. Precipitate calcium citrate
9. Chronic granulomatous disease arises due to defects in the
 - A. Monocytes and neutrophils
 - B. T cells
 - C. B cells
 - D. RBCs
10. Cathepsin G is a marker for
 - A. Mitochondria
 - B. Chloroplast
 - C. Lysosomes
 - D. Golgi bodies

Sample Questions for M.Sc. Biotechnology

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

Sample Questions for M.Sc. Botany

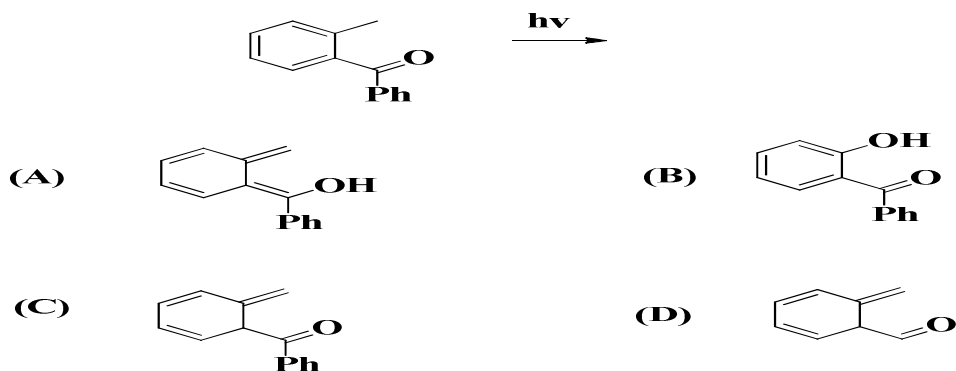
- In C_4 plants the first CO_2 acceptor is :
 A) Ribulose – 1,5-bisphosphate
 B) Phosphoenol pyruvate
 C) Pyruvate
 D) Ribulose-5-phosphate
- In majority of angiosperms, the female gametophyte at the time of fertilization is :
 A) 8-celled
 B) 7-celled
 C) 6-celled
 D) 4-celled
- Agar-agar is extracted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

Sample Questions for M.Sc. Chemistry

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

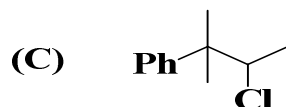
- | | |
|----------------------------|----------------------------|
| (A) Favorski rearrangement | (B) Beckmann rearrangement |
| (C) Fries rearrangement | (D) Wolff rearrangement |

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 (δ 2.15) 2H
- Triplet (δ 2.75) 2H
- Triplet (δ 3.38) 2H
- Singlet (δ 7.22) 5H



4. Ozonolysis of butan-1-ene followed by reduction with Zn / CH_3COOH 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 ΔH° for the reaction (in KJ mol^{-1}):

- (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 $\text{J K}^{-1} \text{mol}^{-1}$)?

- (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. $(\text{C}_2\text{H}_5)_2\text{Zn}$ 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^+ (B) Na^+
(C) K^+ (D) Cs^+

- Two particles each of rest mass 'm' collide head on and stick together. Before collision, the speed of each mass was 0.6 times the speed of light in free space. Mass of final entity is
(A) 2m (B) 5m/2 (C) 25m/8 (D) 5m/4
- The average of the function $f(x) = \sin x$ in the interval $(0, \pi)$ is
(A) $2/\pi$ (B) $4/\pi$ (C) $1/\pi$ (D) $1/2$
- $x^y = e^{x \cdot y}$ is equal to
(A) $x/[(1+\log x)^2]$ (B) $y/[(1+\log x)^2]$ (C) $y/[(1-\log x)^2]$ (D) $\log x/[(1+\log x)^2]$
- If $x = 3 \cos \theta - \cos^3 \theta$ and $y = 3 \sin \theta - \sin^3 \theta$, then dy/dx is equal to
(A) $-\tan^2 \theta$ (B) $\tan^2 \theta$ (C) $-\cos^3 \theta$ (D) $\cos^3 \theta$
- If the radius of the earth is to decrease by 1%, what would be the approximate change in acceleration due to gravity?
(A) increase by 1% (B) increase by 2% (C) decrease by 1% (D) decrease by 2%
- A spring oscillating in water is acted upon by an external force $B \cos \omega t$. With the passage of time, the frequency of the spring tends to be
(A) decreasing exponentially (B) equal to ω
(C) greater than ω (D) less than ω
- A gun shoots three times as high when its angles of elevation is γ cm when it is β . What is the ratio of the horizontal distance travelled respectively in the two cases?
(A) 2:1 (B) 1:3 (C) 1:1 (D) 3:1
- In low density oxygen gas at low temperature, only the translation and rotational modes of molecular are excited. The specific heat per molecules of the gas is
(A) $(-3/2)k_B$ (B) $(-5/2)k_B$ (C) k_B (D) $(1/2)k_B$
- An inertial frame of reference B is moving along the x-axis with a velocity 9×10^6 m/s with respect to another inertial frame A. A rod is located in the frame A with its two ends at the coordinate points (5, -5, 0) B is
(A) 13.5 m (B) 12.5 m (C) 13.0 m (D) 14.0 m
- Consider the head-on elastic collision of a neutron moving respectively through a sample of lead, carbon, paraffin and tin. Which one of the above samples is most efficient in slowing down the neutron?
(A) Tin (B) Paraffin (C) Carbon (D) Lead
- The longitudinal vibrations of a fixed frequency bar gives
(A) Even harmonics (B) Odd harmonics
(C) Both odd and even harmonics (D) Overtones

Sample Questions for M.Sc. Zoology

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