

MODEL /SAMPLE Question Paper for Ph.D Entrance Test-2020, RIMS, Ranchi

SAMPLE QUESTIONS : Research Methodology

- 1 The method by which a sample is chosen
(a) Unit (b) design (c) Random (d) Census

- 2 Research is classified on the basis of and methods
(a) Purpose (b) Intent (c) Methodology (d) Techniques

- 3 A research which follows case study method is called
(a) Clinical or diagnostic (b) Causal (c) Analytical (d) Qualitative

- 4 is a way to systematically solve the research problem
(a) Technique (b) Operations (c) Research methodology (d) Research Process

- 5 Converting a question into a Researchable problem is called
(a) Solution (b) Examination (c) Problem formulation (d) Problem Solving

- 6 The first step in formulating a problem is
(a) Statement of the problem (b) Gathering of Data c) Measurement (d) Understanding
the nature of the problem

- 7 Hypothesis must have
(a) Applicability (b) Durability (c) Testability (d) Measurement

- 8 In testing a Hypothesis the common error is
(a) Type I (b) Type I and II (c) Type II (d) None of these

- 9 Survey is a Study

(a) Descriptive (b) Fact finding (c) Analytical (d) Systematic

10. In a Ph.D. thesis which one is the correct sequence for showing scheme of Chaptalisation?
- (a) Literature review, Introduction, Design of the study, Data-Analysis and interpretation, Conclusions and generalisations, suggested further study, References Appendix
- (b) Introduction, Design of study, Data Analysis and Interpretation, Generalizations, Conclusions and Literature review and suggestions for further research, References and Appendix
- (c) Introduction, Literature review, Design of study, Data-presentation; analysis & Interpretation, Formulation of generalization & Conclusions, Suggestions for further research, References & Appendix
- (d) Literature review, References, Introduction, Design of study, Data analysis and interpretation, Conclusions and generalizations, Suggestions for further research, Appendix
11. In the main purpose is to formulate a problem for more precise investigation
- (a) Exploratory study (b) Descriptive study (c) Diagnostic study (d) None of the above
12. Questions in which only two alternatives are possible is called
- (a) Multiple choice questions (b) Dichotomous questions (c) Open ended questions
- (d) Structured questions
13. The aggregate of all the units pertaining to a study is called
- (a) Population or universe (b) Unit (c) Sample (d) Frame
14. Sample value is called.....
- (a) Parameter (b) Core Value (c)Statistic (d) Variable
15. An example of probability sampling is
- (a) Quota Sampling (b) Snow-ball sampling (c) Purposive sampling (d) Lottery method

SAMPLE QUESTIONS : Medical Science

1. Match the antibiotics in Group I with their mechanism of action in Group II

Group I

Group II

P. Tetracyclines

1. Inhibits bacterial protein synthesis by blocking peptidyltransfer

- | | |
|--------------------|--|
| Q. Chloramphenicol | 2. Inhibits bacterial protein synthesis by blocking the A-site on the ribosome |
| R. Cycloheximide | 3. Misreads the genetic code and inhibits initiation of protein synthesis |
| S. Streptomycin | 4. Inhibits protein synthesis by blocking peptidyl transferase on 80S ribosome |
-
- | | |
|------------------------|------------------------|
| (a) P-2, Q-1, R-3, S-4 | (b) P-2, Q-1, R-4, S-3 |
| (c) P-4, Q-3, R-1, S-2 | (d) P-3, Q-4, R-2, S-1 |

2. This is a consequence of alcohol addiction

- a) psychosis, hypertension and fatty liver syndrome
- b) cardiovascular diseases, hypertension and fatty liver syndrome
- c) ulcers, all types of mental illness, vitamin deficiency, cardiovascular diseases
- d) all of these

3. Which of the following cells is involved in cell-mediated immunity?

- a) Leukaemia
- b) T cells
- c) Mast cells
- d) Thrombocytes

4. Phosphodiester bonds are cleaved by nucleases a group of enzymes present in the cells. Which of the following is FALSE about nucleases:

- a) Nucleases catalyze the hydrolytic cleavage of the phosphodiester linkages.
- b) Nucleases can be exonuclease and endonucleases.
- c) Exonucleases cleave the chain by removing individual nucleotides from 3' or 5' end.
- d) Exonucleases cleave the chain randomly between any nucleotides.

5. Which one of the following compounds does NOT block electron transport?

(a) Cyanide (b) Rotenone (c) Oligomycin (d) Antimycin A

6. Rubber gloves discarded in

- a) Red bag
- b) Blue bag
- c) Yellow bag
- d) White bag

7. Interferons are

- a) Cytokine barriers
- b) Physical barriers
- c) Cellular barriers
- d) Physiological barriers

8. Which of the following cells of the immune system do not perform phagocytosis?

- a) Macrophage
- b) Neutrophil

- c) Eosinophil
- d) Basophil

9. This is concerned with the intrinsic pathway of apoptosis

- a) cytochrome d
- b) cytochrome c
- c) cytochrome b
- d) cytochrome a

10. Who has won the Nobel Prize in Medicine 2020 for the discovery of Hepatitis C virus.?

- a) Harvey J. Alter,
- b) Michael Houghton
- c) Charles M. Rice
- d) All the above

11. The TATA box:

- a) Present on the template strand
- b) Present about 70 base pairs away from transcription start site
- c) Serves as the signal for attachment of RNAP-II
- d) Acts as silencer of the gene

12. Which of the following statement is/are correct about Favipiravir?

- a) Favipiravir is an antiviral COVID-19 drug.
- b) Glenmark Pharmaceuticals under the brand name FabiFlu has launched an antiviral drug Favipiravir.
- c) It is India's first COVID-19 drug launched, priced at Rs 103 per tablet.
- d) All the above are correct.

13 Name a clinical trial in which blood is transfused from recovered COVID-19 patients to a coronavirus patient who is in critical condition?

- a) Plasma Therapy
- b) Solidarity
- c) Remdesivir
- d) Hydroxychloroquine

14. Which of the following diseases are related to coronavirus?

- a) MERS
- b) SARS
- c) Both A and B
- d) Neither A nor B

15. Apoptotic bodies can be recognized with the presence of these on the surface

- a) phosphatidyl tyrosine
- b) phosphatidylinositol
- c) phosphatidylcholine

d) phosphatidylserine

SAMPLE QUESTIONS For Dental

1. Child's first dental visit and oral examination should take place at least by:
 - a. 1 year of age
 - b. 6 year of age
 - c. 3 year of age
 - d. 5 year of age
2. Stainless steel crown was introduced by
 - a. Stewart
 - b. Humphrey
 - c. Mac Donald
 - d. Pinkham
3. Primate spaces are otherwise called as
 - a. Simian spaces
 - b. Primate spaces by Baume
 - c. Anthropoid spaces
 - d. All of the above
4. All the conditions are associated with delayed eruption of teeth except
 - a. Hyperthyroidism
 - b. Hypopituitarism
 - c. Cleidocranial dysplasia
 - d. Gardner's Syndrome
5. Teeth lost as a result of trauma is classified by Ellis and Davey as
 - a. Class I
 - b. Class VII
 - c. Class VI
 - d. Class V
6. Battered child syndrome was first described by
 - a. Rosenberg
 - b. Caffey
 - c. Silverman
 - d. Kempe

7. One of the following is not a type of mouth breathing
- Anatomic
 - Physiologic
 - Habitual
 - Obstructive
8. All the following are types of sealants except
- Colored sealants
 - Self-cure sealants
 - Light cure sealants
 - Heat cure sealants
9. Christmas disease is
- Hemophilia A
 - Hemophilia B
 - Hemophilia C
 - Von Willebrand's disease
10. Tetracycline prescription should be avoided in children below what age
- 3 years
 - 8 years
 - 12 years
 - 21 years
11. The filtration required for up to 70 Kvp, in mm of aluminium is
- 2.5
 - 1.5
 - .75
 - 2
12. The SI unit for absorbed dose is
- Roentgen
 - Sievert
 - Gray
 - rad
13. Dental x-ray beams are usually collimated to a circle of diameter
- 8cm
 - 7cm
 - 7.5cm
 - 6cm

14. The heat storage capacity for anodes of dental diagnostic tubes is approximately:

- a) 70 kHU
- b) 8 kHU
- c) 20 kHU
- d) 90 kHU

15. The radiosensitivity of lymphoid organs, bone marrow, mucous membranes is

- a) High
- b) Intermediate
- c) Low
- d) Insensitive

SAMPLE QUESTIONS For Para – Medical

1. Which structure lies immediately lateral to femoral hernia?

- a) Lateral cutaneous nerve of thigh
- b) Femoral nerve
- c) Femoral artery
- d) Femoral vein

2. Structure not passing through the oesophageal hiatus?

- a) Left phrenic nerve
- b) Right vagus nerve
- c) Left vagus nerve
- d) Left gastric artery

3. The first centres of ossification appears during which month of pregnancy?

- a) At the end of 2nd month of pregnancy
- b) At the beginning of 3rd month of pregnancy
- c) At the end of 3rd month of pregnancy
- d) At the end of 4th month of pregnancy

4. Adverse effects of hypothermia are all except:

- a) Cardiac arrhythmias
- b) Renal failure
- c) Decreased peripheral resistance
- d) Reversible coagulopathy

5. Total volume excessive load is prevented by activation of which of the following receptors:

- a) T receptor
- b) Thoracic muscle spindle
- c) Bronchial stretch receptor
- d) Arterial baroreceptor

6 Chymotrypsinogen is a:

- a) Transaminase
- b) Elastase
- c) Carboxypeptidase
- d) Zymogen

7 The etiology of periarthritis of shoulder is:

- a) Degenerative cartilage in glenoid ligament
- b) Infection of shoulder joint
- c) Fracture of surgical neck of humerus
- d) Idiopathic

8 The fascia which is not generally involved in Dupuytren's contracture is:

- a) Cleland's ligament
- b) Greyson's ligament
- c) Spiral band
- d) All of the above

9 In bony ankylosis there is:

- a) Painless, no movement
- b) Painful complete movement
- c) Painless complete movement
- d) Painful incomplete movement

10 Which is/are x-ray finding in infantile scurvy:

- a) A dense line between metaphysis and epiphyseal cartilage
- b) A clear band on diaphysial side
- c) None of these
- d) Both of these

11 Swan neck deformity is a feature of:

- a) Gouty arthritis
- b) Rheumatoid arthritis
- c) Osteoarthritis
- d) Mallet finger

12 Bone tumour metastasising to bone is:

- a) Giant cell tumour
- b) Ewing's sarcoma
- c) Chondrosarcoma
- d) Osteosarcoma

13 Normal ROM of ankle joint:

- a) 45 degrees of plantarflexion, 10-20 degree of dorsiflexion
- b) 30 degree of plantarflexion, 10-15 degree dorsiflexion
- c) 35 degree of plantarflexion, 20-30 degree of dorsiflexion

d) 25 degree of planterflexion, 10-15 degree of dorsiflexion

14 Athlete having non specific symptoms for number of weeks, like headache, dizziness, poor memory and concentration slow decision making is seen in:

- a) Concussion
- b) Post concussion syndrome
- c) Head injury
- d) Hypercapnic headache

15 This principle asserts the human body adapts specifically to imposed demands. It demonstrates that given stressor on the human system, whether biomechanical or neurological. Which principle is this:

- a) FITT
- b) SAID
- c) Overload
- d) Progression

Sample Questions for Nursing

1. How do you test the placement of an enteral tube?
 - a) Monitoring bubbling at the end of the tube
 - b) Testing the acidity/alkalinity of aspirate using blue litmus paper
 - c) Interpreting absence of respiratory distress as an indicator of correct positioning
 - d) Have an abdominal x-ray
2. A client was diagnosed to have infection. What is not a sign or symptom of infection?
 - a) A temperature of more than 38°C
 - b) warm skin
 - c) Chills and sweats
 - d) Aching muscles
3. Which of the following are not signs of a speed shock?
 - a) Flushed face
 - b) Headache and dizziness
 - c) Tachycardia and fall in blood pressure
 - d) Peripheral oedema
4. Which is not a sign or symptom of speed shock?
 - a) Headache
 - b) A tight feeling in the chest
 - c) Irregular pulse
 - d) Cyanosis

5. While giving an IV infusion your patient develops speed shock. What is not a sign and symptom of this?
- a) Circulatory collapse
 - b) Peripheral oedema
 - c) Facial flushing
 - d) Headache
6. Signs of hypovolemic shock would include all except:
- a) restlessness, anxiety or confusion
 - b) shallow respiratory rate, becoming weak
 - c) rising pulse rate
 - d) low urine output of <0.5 mL/kg/h E. pallor (pale, cyanotic skin) and later sweating
7. What are the signs and symptoms of shock during early stage (stage 1-3)?
- a) hypoxemia
 - b) tachycardia and hyperventilation
 - c) hypotension
 - d) acidosis
8. All but one are signs of anaphylaxis:
- a) itchy skin or a raised, red skin rash
 - b) swollen eyes, lips, hands and feet
 - c) hypertension and tachycardia
 - d) abdominal pain, nausea and vomiting
9. What are the signs and symptoms of shock during early stage (stage 1-3)?
(CHOOSE 3 ANSWERS)
- a) hypoxemia
 - b) tachycardia and hyperventilation
 - c) hypotension
 - d) Acidosis
10. After lumbar puncture, the patient experienced shock. What is the etiology behind it?
- a) Increased ICP
 - b) Headache
 - c) Side effect of medications
 - d) CSF leakage
11. What is meant by 'Gillick competent'?
- a) Children under the age of 12 who are believed to have enough intelligence, competence and understanding to fully appreciate what's involved in their treatment.
 - b) Children under the age of 16 who are believed to have enough intelligence, competence and understanding to fully appreciate what's involved in their treatment
 - c) Children under the age of 18 who are believed not to have enough intelligence, competence and understanding to fully appreciate what's involved in their treatment.

- d) Children under the lawful age of consent who are believed not to have enough intelligence, competence and understanding
12. Normal heart rate for 1 to 2 years old?
- a) 80 - 140 beats per minute
 - b) 80 - 110 beats per minute
 - c) 75 - 115 beats per minute
13. Recognition of the unwell child is crucial. The following are all signs and symptoms of respiratory distress in children EXCEPT:
- a) Lying supine
 - b) Nasal flaring
 - c) Intercostal and sternal recession
 - d) adopting an upright position
14. During blood transfusion, a patient develops pyrexia, and loin pain. RN interprets the situation as
- a) Common reaction to transfusion
 - b) Adverse reaction to blood transfusion
 - c) Patient has septicaemia
 - d) adopting an upright position
15. What are the steps of the nursing Process?
- a) Assessing, diagnosing, planning, implementing, and evaluating
 - b) Assessing, planning, implementing, evaluating, documenting
 - c) Assessing, observing, diagnosing, planning, evaluating
 - d) Assessing, reacting, implementing, planning, evaluating

Sample Questions for Life Sciences

1. Nuclear envelope in a human cell is -
- a. A single layer membrane.
 - b. A combination of two-bilayer membrane structure.
 - c. A membranous structure without any pore.
 - d. A membranous structure with intranuclear invaginations.
2. Identify the transport system, which needs energy in the form of ATP.
- a. Osmosis.
 - b. Diffusion.
 - c. Facilitated diffusion.
 - d. Endocytosis.
3. Which of the following statements are false regarding autophagy?
- a. It is a housekeeping process.
 - b. Ribosomes play a key role in the process of autophagy.
 - c. Obsolete organelles are recycled through this process.

d. Protein aggregates are degraded by this process.

4. Hyaluronic acid is -
- a. A structural proteoglycan, which does not participate in cellular activities.
 - b. A highly branched complex structure thus helps in retaining water.
 - c. Major non-fibrous component of the extracellular matrix.
 - d. Made up of carbohydrate, hence not taking up any tertiary structure in aqueous solution.
5. Atomic absorption spectrometry is used for the estimation of ---- in biological samples.
- a. Glycolipids.
 - b. Metals.
 - c. Nucleic acids.
 - d. Short-chain fatty acids.
6. When a glandular cell is bathed in radioactive amino acids, newly formed radioactive proteins can be detected in the Golgi apparatus at the earliest -
- a. Within a minute.
 - b. 3-5 minutes.
 - c. 15-20 minutes.
 - d. After 1-2 hours.
7. Identify the stop codon.
- a. UAU.
 - b. UAA.
 - c. UGG.
 - d. UUA.
8. Which of the following statements about siRNA is incorrect?
- a. These are short RNAs.
 - b. These are noncoding RNAs.
 - c. These are single-stranded RNAs.
 - d. These are involved in gene expressions.
9. Telomere
- a. Allows the elongation of chromosomes during cell division.
 - b. Prevents degradation of genes during cell division.
 - c. Maintains its own number and length during multiple cell division.
 - d. Increases in number with aging.
10. Average concentration of Na⁺ in intracellular fluid is approximately ---
- a. 10 mEq/L.
 - b. 60 mEq/L.
 - c. 100 mEq/L.
 - d. 140 mEq/L.

11. Amount of water transport across the cell membrane on any instance depends on -
- The number of receptors present on the external surface of the cell membrane.
 - The number of aquaporins present within the cell at that instance.
 - The number of aquaporins active on the cell membrane at that instance.
 - Capacity of the cell to produce aquaporin.
12. In case of facilitated diffusion V_{max} -
- Indicates minimum substrate concentration when the rate of diffusion is maximum.
 - Indicates the maximum rate of transport when the substrate concentration is not a limiting factor.
 - Indicates the maximum substrate concentration when the rate of transport is not a limiting factor.
 - Indicates minimum substrate concentration at which the facilitator protein can optimally change its conformation.
13. Who won the Nobel Prize 2020 for the development of a method for genome editing?
- Emmanuelle Charpentier and Jennifer A Doudna.
 - Emmanuelle Charpentier and Harvey J Alter.
 - Harvey J Alter and Jennifer A Doudna.
 - Harvey J Alter and Charles M Rice.
14. Composition of plasma and interstitial fluid is mostly similar, except ---
- Concentration of carbohydrates.
 - Concentration of proteins.
 - Concentration of fats.
 - Concentration of urea.
15. The enzyme responsible for the synthesis of RNA primer in eukaryotes is
- DNA polymerase.
 - Topoisomerase.
 - Primase.
 - Gyrase.
-