Admissions on Aptitude Test Basis 2012

Sample Test Papers

DEPARTMENT OF APPLIED PHYSICS

Sample Questions for BS (Honors) I

1. Petrol is ------------- in water.
   - A) Insoluble
   - B) intangible
   - C) indivisible
   - D) invisible

2. This is final ---------- of the popular TV series.
   - A) scene
   - B) episode
   - C) act
   - D) show

3. The judge ------------ the hearing to the next month.
   - A) changed
   - B) altered
   - C) adjourned
   - D) dated

4. $(4 - 3i) \times (-1 + 3i) = $ -------------.
   - A) $5 + 15i$
   - B) $5 - 15i$
   - C) $-5 + 15i$
   - D) $-5 - 15i$

5. $\cos^2 \theta / (1 + \sin \theta) = $ ---------- provided $\sin \theta \neq 1$
   - A) $1 + \cos \theta$
   - B) $1 - \cos \theta$
   - C) $1 + \sin \theta$
   - D) $1 - \sin \theta$

6. The graph of $\{(x, 1/x) \mid x \neq 0, x \, \varepsilon \, R\}$ is known as -------------.
   - A) *rectangular hyperbola*
   - B) hyperbola
   - C) *ellipse*
   - D) *parabola*

7. The equation of a line through $(-2, 5)$, with slope 3 is --------------
   - A) $3x - y + 11 = 0$
   - B) $3x + y + 11 = 0$
   - C) $3x + y - 11 = 0$
   - D) $3x - y - 11 = 0$

8. $\int \ln x \, dx = $ ---------------
   - A) $x \ln x + c$
   - B) $x \ln x - x + c$
   - C) $x \ln x + x$
   - D) $x + c$

9. The dot product of two perpendicular vectors is ----------.
   - A) one
   - B) infinite
   - C) zero
   - D) two

10. A transistor has ----------- PN junction(s).
    - A) one
    - B) two
    - C) three
    - D) four

11. A projectile is fired with an initial velocity of 120 m/s at an angle above the horizontal. If the projectile's initial speed is 55m/s, the angle is -------------
    - A) 13°
    - B) 63°
    - C) 27°
    - D) 75°

12. In simple harmonic motion the magnitude of acceleration is the greatest when --------
    - A) displacement is zero
    - B) displacement is maximum
    - C) force is zero
    - D) velocity is maximum

Sample Questions for M.Sc. (Prev.)

1. When placed in a uniform magnetic field, a dipole experiences
   - A) a net force
   - B) a torque
   - C) both a net force and a torque
   - D) neither a net force nor a torque

2. An electron of mass '*M*' kg and charge '*e*' Coulomb travels from rest through a potential difference of '*V*' volts. The final velocity of the electron is (in m/s)
   - A) $\dfrac{2eV}{M}$
   - B) $\dfrac{2MV}{e}$
   - C) $\sqrt{\dfrac{2eV}{M}}$
   - D) $\sqrt{\dfrac{2MV}{e}}$

3. In the Bohr atomic model of hydrogen atom, the electron circulates around the nucleus in a path of radius 5.1×10^{-11} m at a frequency of 6.8×10^{15} revolutions per second. The equivalent current will be

A) 2 mA, B) 1.088 mA C) 1.5 mA D) 4.2 mA

4. Choose the scientist who explained the splitting of spectral lines in a magnetic field

A) Zeeman B) Bohr C) Sommerfeld D) Einstein

5. The energy required to raise an electron of hydrogen atom from the first orbit to the second orbit will be

A) 12.98 eV B) 10.2 eV C) 14.09 eV D) 67.43 eV

6. The synthetic division of $p(x) = x^3 - x^2 + x - 1$ by $x - 1$ gives _____

A) $x^2 + x - 1$ B) $x^2 - 1$ C) $x^3 + x - 1$ D) $x^2 + 1$

7. The sum of the squares of two numbers is 925 and the difference of their squares is 875. What are the numbers?

A) 30 , 5 B) 40 , 5 C) 25, 15 D) 40 , 10

8. $(-4, 0)$, $(4, 0)$, and $(0, 4\sqrt{3})$ are the vertices of _____ triangle

A) a right angled B) an isosceles C) an equilateral D) None of these

9. A triangle has sides $a = 100$ cm, $b = 125$ cm, $c = 80$ cm, angles A, B, C are ____respectively.

A) 40 ,87 ,53 B) 53 ,87 ,40 C) 60 , 80 , 50 D) 50, 60, 80

10. The value of arc $\sin \dfrac{3}{5}$ + arc $\sin \dfrac{4}{5}$ is arc sin _____

A) 7/25 B) 12/25 C) 1/25 D) 24/25

11. Choose the most appropriate answer:

Take this road and you will _____ at the hostel in ten minutes

A) arrive B) come C) reach D) appear

13. Wild ducks always fly in a definite _____

A) figure B) shape C) pattern D) formula

13. The character of the lady of the house is developed through

A) inner thoughts of the guests B) author's description
C) appearance D) action and dialogue

14. The tone of the selection can best be interpreted as

A) scornful B) sophisticated C) naïve D) optimistic

15. Every hero becomes a bore at last is an example of

A) truism B) epigram C) blurb D) conceit

DEPARTMENT OF BIOTECHNOLOGY

Sample Test Paper

Note: Each question is followed by four choices. Choose the best option.

1. Doctoral students who are preparing to take their qualifying examination have been studying in the library every night _____ the last three months.
    - A. since
    - B. until
    - C. before
    - D. for

2. _____ of the play, 'Mourning Becomes Electra', introduces the cast of characters and hints at the plot.
    - A. The act first
    - B. Act one
    - C. Act first
    - D. First act

3. As soon as _____ with an acid, salt is formed.
    - A. a base will react
    - B. a base reacts
    - C. a base is reacting
    - D. the reaction of a base

4. To answer accurately is more important than _____
    - A. a quick finish
    - B. to finish quickly
    - C. finishing quickly
    - D. you finish quickly

5. It takes 30 days to fill a laboratory dish with bacteria. If the number of bacteria double each day, how long will it take for the bacteria to fill one-half of the dish?
    - A. 10 days
    - B. 29.5 days
    - C. 29 days
    - D. 15 days

6. Which of the following integers has the most divisors?
    - A. 88
    - B. 91
    - C. 95
    - D. 101

7. The cost of two flasks and a beaker totals Rs. 175. If the beaker costs Rs. 25 more than the flasks, what is the cost of a pair of flasks?
    - A. Rs. 100
    - B. Rs. 75
    - C. Rs. 125
    - D. Rs. 115

8. Successive discounts of 20% and 15% are equal to a single discount of
    - A. 30%
    - B. 32%
    - C. 34%
    - D. 35%

9. Eighty (80) is equal to
    - A. $16\sqrt{2}$
    - B. $8\sqrt{2}$
    - C. $4\sqrt{5}$
    - D. None of the above

10. The ability of the lens to distinguish two closely lying objects is
    - A. Resolution
    - B. Optical Density
    - C. Transmittance
    - D. All of them

11. Which of the following processes does not involve carrier mediated transport?
    - A. Active transport
    - B. Facilitated diffusion
    - C. Simple diffusion
    - D. Transport that involves adding a PO4 group to a nutrient.

12. The characteristic feature of the Gram negative bacteria is the presence of:
    - A. Lipoprotein envelop
    - B. Peptidoglucan
    - C. Starch
    - D. Glycogen

13. Kb is an abbreviation for _____ base-pairs of DNA or RNA.
    - A. 10
    - B. 100
    - C. 1000
    - D. 10000

14. The site of protein synthesis is / are:
    - A. Mitochondria
    - B. Nucleus
    - C. Ribosomes
    - D. Golgi apparatus

15. Enzymes produced continuously throughout the life cycle of the cells are
    _____ enzymes.

    A. Substitutive   C. Inducible
    B. Constitutive   D. None of them

16. The Sequence of amino acids residues in a peptide chain is:

    A. Secondary structure   C. Quaternary structure
    B. Primary structure   D. Tertiary structure

17. What is the net production of ATP in anaerobic glycolysis?

    A. 2 moles   C. 6 moles
    B. 4 moles   D. 8 moles

18. Ordinary hydrogen molecule is a mixture of two forms of hydrogen. These are called:

    A. Ortho and para hydrogen.   C. Meta and para hydrogen
    B. Ortho and meta hydrogen   D. None of them.

19. VII–A group is termed as Halogens because they are:

    A. Gum producers   C. Acid producers
    B. Salt producers   D. Base producers

20. Transition elements form:

    A. Anions   C. Complex ions
    B. Cations   D. Simple ions

DEPARTMENT OF CHEMICAL ENGINEERING

SAMPLE TEST PAPER

Note: Choose the correct answer and write ("A", "B", or "C") against the question number in the answer sheet. **Do not write anything on question paper.**

"CHEMISTRY"

1. One gram mole of any compound will have _____ molecules
   A) 6.02×10^{23}
   B) 6.15×10^{-18}
   C) 6.02×10^{-23}

2. The pH of a solution is 7, it's Hydrogen ion concentration will be:
   A) Zero M.
   B) 10^{-7} M.
   C) 10^7 M.

3. Existence of a solid in more than one forms is called:
   A) Isomerism
   B) Isomorphism
   C) Polymorphism

4. β rays are:
   A) Electron emitting from nucleus
   B) Helium atom
   C) Helium nuclei.

5. Name in IUPAC system.

$$CH_3 — CH — CH — CH — COOH$$
$$\qquad | \qquad | \qquad |$$
$$\qquad CH_3 \quad Br \quad CH_3$$

   A) 3 bromo 2, 4 dimethyl pentanoic acid
   B) 2 bromo 1, 3 dimethyl butanoic acid
   C) 3 bromo 1, 3 dimethyl pentanoic acid

6. Octane Number in Gasoline is increase by:
   A) Distillation
   B) Cracking
   C) Reforming

7. Deuterium and Tritium are the Isotopes of:
   A) Hydrogen
   B) Oxygen
   C) Nitrogen

"PHYSICS"

8. A ball is thrown upward from a position of 2 meters above the ground level. The ball will have maximum Potential Energy at:
   A) 2 meter above the ground
   B) At the highest point.
   C) just above the ground.

9. The Momentum of a bullet having a mass of 100 gm and a velocity of 100 meter per second will be _____
   A) 10000 kg m/sec.
   B) 10 kg m/sec.
   C) 10^{-4} kg m/sec.

10. Two resistances of 2, and 3 ohm in series will have a total resistance of
    A) 1 ohm
    B) 0.86 ohm
    C) 5 ohm

DEPARTMENT OF COMPUTER SCIENCE

Sample Test Paper and other relevant information is available at

INSTITUTE OF ENVIRONMENTAL STUDIES

SAMPLE TEST FOR BS PROGRAMME
SECTION – A (English)

I. The following sentences contain problems in grammar, usage, diction (choice of words), and idiom. Some sentences are correct. No sentence contains more than one error. You will find that the error, if there is one, in underlined and lettered.

1. A complete system of checks and balances <u>have been incorporated</u> in <u>our</u> constitution
                                                  A   B

   <u>from inception</u> to protect the <u>principle</u> of equality. <u>No error</u>
        C   D   E

2. <u>As a result</u> of the bad weather, she is the <u>only</u> one of my friends
      A   B

   <u>who</u> <u>plan</u> to attend the graduation exercises. <u>No error</u>
     C   D   E

II . Choose the word or phrase that is most nearly similar in meaning to the word in capital letters.

a. CALAMITY
   | A) Trouble | B) Affliction | C) Misfortune | D) Disaster |

b.. ABSTEMIOUS
   | A) Moderate | B) Fussy | C) Indulgent | D) *Delicate* |

c. ACCLIMATION
   | A) Storm's end | B) Keen interest | C) Temporary decline | D) Adaptation |

III Do as directed: (Select the appropriate answer)

a.. They call me for an interview. (Change voice)
   A) I was called for an interview by them   B) I am called for an interview by them.
   C) They called me for an interview.   D) They are calling me for an interview

b. My uncle lives in England. (Change into future perfect tense)
   A) My uncle will be living in England   B) My uncle will live in England
   C) My uncle will have been living in England   D) My uncle will have lived in England

SECTION – B (Biology)

1. Plant cell wall is made up of
   | A) Protein | B) Hemicellose | C) Glyco proteins | D) Celloluse |

2. Mitochondria in cells act in
   | A) Sucrose production | B) Osmoregulation | C) Power house | D) Storage |

SECTION – B (Chemistry)

1. Acid rain is a problem due to emission of
   | A) CO_2 | B) SO_2 | C) Pb | D) O_3 |

2. Hardness of water is due to the presence of:
   A) Calcium carbonate   B) Calcium bicarbonate
   C) Calcium hydroxide   D) Calcium oxide

SECTION-C (General Knowledge and Basic Maths)

1. The first Governor General of Pakistan
   A) Quaid-e-Azam   B) Askendar Mirza   C) Noor ul Amin   D) Ayub Khan

2. The climate of Pakistan is
   A) Arid   B) Semiarid   C) Tropical   D) Subtropica

SAMPLE TEST PAER FOR M.Sc.

SECTION – A (English)

II. The following sentences contain problems in grammar, usage, diction (choice of words), and idiom. Some sentences are correct. No sentence contains more than one error. You will find that the error, if there is one, in underlined and lettered.

1. A complete system of checks and balances <u>have been incorporated</u>
   <div align="center">A</div>

   in <u>our</u> constitution <u>from inception</u> to protect the <u>principle</u> of equality. <u>No error</u>
     B   C   D   E

2. <u>As a result</u> of the bad weather, she is the <u>only</u> one of my friends <u>who</u> <u>plan</u> to
       A   B   C   D

   attend the graduation exercises. <u>No error</u>
                               E

3. <u>Bear in mind</u> that <u>since</u> words are tools, <u>only</u> experienced writers <u>are permitted</u>
       A   B   C   D

   <u>in taking</u> liberties in writing style. <u>No error</u>
                            E

4. <u>When descending</u> from 37,000 feet <u>to make</u> <u>our</u> landing, the pressure <u>affected</u>
         A   B   C   D

   our ears. <u>No error</u>.
            E

SECTION – B (Chemistry)

3. The SI unit of amount of a substance is:
   A) Kilogram   B) Atomic mass unit
   C) Mole   D) mg/L

4. Hardness of water is due to the presence of:
   A) Calcium carbonate   B) bicarbonate
       C)   Calcium hydroxide   D)   Calcium oxide

5. A reaction that liberates energy is a/an:
   A) Endothermic reaction   B) Exothermic reaction
   C) Decomposition reaction   D) Equilibrium reaction

6. $Al(NO_3)_3$ is a/an:
   A) Ionic compound   B) Covalent compound
   C) Co-ordinate compound   D) Complex compound

SECTION – B (Biology)

1. Fibrous proteins have molecules resembling coiled springs such as:
   A) Enzymes
   B) Harmones
   C) Collagen
   D) Lipoproteins
2. Submerged aquatic plants obtain CO_2 by/from:
   A) Surrounding water
   B) Other living being
   C) Photosynthesis
   D) These plants do not require CO_2
3. By history and habit humans are:
   A) Herbinors
   B) Carnivores
   C) Detritivores
   D) Omnivoses
4. The relationship of two organisms living together where one benefits and other is harmed:
   A) Mutualism
   B) Commensalism
   C) Saprophytism
   D) Parasitism

SECTION-C (General Knowledge)

Choose the correct answer:

1. In Roman numerical which one is equal to 40
   A) LX
   B) LV
   C) XL
   D) CL
2. Which one is the highest altitude in Africa
   A) Mount Kilimanjaro
   B) Mount Kosciusko
   C) Mount Mckinley
   D) Mount Aconcagua
3. Which one is in third place among the highest peaks in the world?
   A) Kangchenjunga
   B) K-2
   C) Lhotse
   D) Makalu I
4. The coldest place in the world is
   A) Northice Station
   B) Oymyakon Station
   C) Vostok Station
   D) Sarmiento Station

KARACHI UNIVERSITY BUSINESS SCHOOL

DEPARTMENT OF COMMERCE

DEPARTMENT OF PUBLIC ADMINISTRATION

SAMPLE TEST PAPER
(for Business Administration / Public Administration / Commerce)

GENERAL INSTRUCTIONS

1. The test is divided into several parts. Each part is composed of objective (multiple choice) questions.
2. Possible answers are given in the form of **A), B), C) or D).** You are expected to encircle the alphabet of the correct answer (only one alphabet) on your Answer Sheet.

PART I. Vocabulary

1. Sacrilegious
   A) Lustful   B) Irreverent   C) Sudden outburst   D) Wisdom
2. Qualm
   A) Prey   B) Breakthrough   C) Fright   D) Seeming to be
3. Quasi
   A) Unpredictable or mercurial   B) Line of people
   C) Strange   D) Seeming to be
4. Providential
   A) To make angry   B) Supposed
   C) Drink in large amount   D) Lucky
5. Raconteur
   A) Formidable   B) Integrity
   C) An accusation for accusation   D) Somebody who tells entertaining stories
6. Rout
   A) Defeat   B) Uproar   C) Rough and disorderly D) Regretful
7. Protract
   A) Familiar saying   B) Divine direction   C) Lucky   D) Extend

PART II. Sentence Completion

1. _____ He is rich, he has few friends.
   A) Though   B) Since   C) In spite of   D) Despite
2. He wishes he _____ handsome.
   A) Were   B) Be   C) Is   D) Would be
3. He was _____ a fat man he couldn't walk.
   A) So   B) Too   C) Such   D) Very

4. He was successful _____ making money.
   A) On   B) In   C) For   D) To

PART III. Reading Comprehension

Read the following passage carefully and answer the questions that follow.

A very important world problem which affects us at the moment is the increasing number of people who actually inhabit this planet. The <u>limited</u> amount of land and land resources will soon be unable to support the huge population if **it** continues to grow at its present rate.

In a survey conducted in 1888, a billion and a half people inhabited the earth. Now, the population exceeds five billion and is growing fast - by the <u>staggering</u> figure of 90 million in 1988 alone. Most experts believe the population size will still pass eight billion during the next 50 years.

So why is this huge increase in population taking place? It is really due to the spread of the knowledge and practice of what is becoming known as "Death Control". "Death Control" recognizes the work of the doctors and scientists who now keep alive people who, not very long ago, would have died of a variety of then <u>incurable</u> diseases. Through a wide variety of technological innovations that include farming methods and sanitation, as well as the control of these deadly diseases, we have found ways to reduce the rate at which we die - creating a <u>population explosion</u>.

It is a very common belief that the problems of the population explosion are caused mainly by poor people living in poor countries who do not know enough to limit their reproduction. This is not true. The actual number of people in an area is not as important as the effect they have on nature. Developing countries do have an effect on their environment, but it is the populations of richer countries that have a far greater impact on the earth as a whole.

The birth of a baby in, for example, Hong Kong, imposes more than a hundred times the amount of stress on the world's resources as a baby in India. Most people in India do not grow up to own cars or air-conditioners - nor do they eat the huge amount of meat and fish that the Hong Kong child does. **Their** life-styles do not require vast quantities of minerals and energy. Also, they are aware of the requirements of the land around them and try to put something back into nature to replace what they take out. The Hong Kong person simply takes without any thought as to what effect he is having on nature.

In short then, it is everybody's duty to <u>safeguard</u> the future of mankind - not only through population control, but by being more aware of the effect his actions have on nature. Nature is both fragile and powerful. It is very easily destroyed; **on the other hand**, it can so easily destroy its most aggressive enemy - man.

1. Suggest a suitable title for the passage.

2. What does 'it' refer to in line 3?
   i.   important world problem
   ii.   increasing number
   iii. limited amount of land
   iv.   huge population.
3. Which of the following does 'Their' refer to in paragraph 5?
   i.   babies in India
   ii.   babies in Hong Kong
   iii. cars and air-conditioners
   iv.   the world's resources

4. What reason has the author given behind the increase of the population? Use your own words.
5. The writer's main purpose in paragraph 5 is to argue that:
   i. people in developed countries generally have more impact on nature than others
   ii. Hong Kong children are generally better off than children born in India
   iii. Hong Kong children consume too much of the world's resources
   iv. people from some countries are more selfish than others in their consumption of resources
6. Which of the following could replace 'on the other hand' (paragraph 6) without changing the meaning:

A) Besides	B) Furthermore
D) While	C) However

7. Based on information in the passage, which of the following would the writer probably recommend:
   i. increasing food and industrial production, and encouraging people in undeveloped countries to have fewer children
   ii. improving education about the environment and banning the export of wood products from poor to rich countries
   iii. encouraging people worldwide to have fewer children and to behave in a more responsible way towards nature
   iv. restricting population worldwide and increasing the use of nonrenewable resources

8. Provide meaning of the underlined words with reference to the context.

PART-IV (General Mathematics – Sequence and Series)

This part of the test requires you to study a series of numbers. Understand the pattern, and identify the next number in the series:

1.   3   5   9   15   23   33   ?
   A) 30   B) 43   C) 45   D) 55

2.   2   8   18   32   ?
   A) 38   B) 48   C) 50   D) 64

PART-V (General Mathematics – Word Problems)
This part of the test consists of 15 word problems such as those shown in the examples below:

1. Men's white handkerchief costs Rs. 2.29 for 3. The cost per dozen is:
   A) 6.87   B) 9.16   C) 13.74   D) 27.48

2. A piece of wood weighing 10 ounces is found to have a weight of 8 ounces after drying. The moisture content was:
   A) 10%   B) 20%   C) 80%   D) 33.33%

PART-VI (General Mathematics – Simple Arithmetic)

1. **1.5 – 1.82 + 0.32**
   A) 0.00   B) 0.01   C) 0.1-   D) 0.32

2. **3/48 is what part of 1/12**

A) 1/2   B) 3/4   C) 4/3s   D) 12

PART-VII (General Knowledge)

1. *Rauf Denktash is a Muslim Leader of :*
   A) Albania   B) Bosnia   C) Cyprus   D) Turkey

2. *Taha Yasin Remadan was a former :*
   A) Foreign Minister of Egypt   B) Foreign Minister of Syria
   C) Secretary General of Arab League   D) Vice President of Iraq

3. *Mr. Edward H. Seed, who died recently, was originally from :*
   A) Iraq   B) Lebanon   C) Palestine   D) Syria