SELF ASSESSMENT

PRE-ENTRY TEST

for

ENGINEERING
COLLEGES / UNIVERSITIES

ilm.com.pk

Designed By

ilm.com.pk

ilm.com.pk

INSTRUCTIONS

Read the following rules and instructions carefully, Non-compliance with instructions would result in disqualification of your candidature.

1. Listen carefully, the instructions given by Examiner.
2. Fill in your name in Block letters and Entry test roll no. with ball point pen on this question paper and Answer sheet clearly.
3. With Answer Sheet is attached a duplicate sheet which make carbon copy of original sheet. Original sheet is to be returned back and duplicate sheet is for you.
4. Question paper is consist of four separate sections i.e. English, Chemistry, Math, Physics.
5. Do not open any section unless Examiner asks you to open.
6. Each section has to be attempted in 20 minutes. You will be told when to start and when to stop.
7. Do not start next section if you finish earlier. Wait for the instructions from Examiner.
8. If any one found having next section open, would be awarded 5 minutes time deduction penalty.
9. Use your ball-pen to shade the right answer option on answer sheet. Shade the box completely.
10. If more than one box found shaded either partially or completely, no marks will be given for that question.
11. You are not allowed to use Mobile phones, Programmable calculators and Extra paper. Blank page attached with this question paper can be used for rough work.
12. Borrowing, talking, whispering, waving hands or moving head around is strictly prohibited.

DO NOT OPEN NEXT PAGE UNLESS YOU ARE ASKED.

ENGLISH

WAIT FOR THE INSTRUCTIONS

ilm.com.pk

Q.1 Profit has increased over the past months ……we start the new year in a strong financial position.

(A) and (B) but (C) so (D) however

Q.2 Adduce means……

(A) to find a solution to (B) to persuade

(C) to increase (D) to cite or allege

Q.3 Agronomist is one who is……..

(A) an expert in finance (B) an expert in botany

(C) an expert in field crop production (D) an expert in home economics

Q.4 The synonym of secure is…….

(A) secret (B) comfortable (C) safe (D) independent

Q.5 The antonym of robust is……

(A) thin (B) emaciated (C) C. light (D) strong

Q.6 I saw something about it……the television

(A) in (B) on (C) at (D) through

Q.7 Mr. Akhter is on duty……..5 hours

(A) for (B) by (C) since (D) into

Q.8 The indirect form of: <u>He said," Sky is blue."</u>

(A) He said that the sky was blue. (B) He told me that the sky is blue.

(C) He said that, sky is blue. (D) None of these

Q.9 The indirect form of: <u>He said, "Will you listen to such a man."</u>

(A) He asked them will you listen to such a man

(B) He asked them are you listening to such a man.

(C) He asked them whether they would listen to such a man.

(D) He asked them whether they will listen to such a man.

Q.10 The indirect form of: She said to me, "Are you a doctor?"

(A) She asked me that was I a doctor. (B) She asked me that I was a doctor.

(C) She asked me if I was a doctor. (D) She asked me if I were a doctor.

Q.11 The indirect form of: Who teaches you English?

(A)By whom were you taught English?

(B) By whom are you taught English.

(C) English is taught by whom?

(D) By whom will you be taught English?

Q.12 The indirect form of: Please help me

(A) You were requested to help me. (B) You are been requested to help me

(C) You are requested to help me. (D) You have been requested to help me

Q.13 The related pair of word for: Fish: scales is:

(A) plane: wings (B) birds: feathers (C) cat: claws (D) snake: fangs

Q.14 The related pair of word for: Robin: nest

(A) animal: cave (B) horse: stall (C) clam: shell (D) rabbit: burrow

Q.15 The related pair of word for: team: athletes

(A) game: series (B) alliance: nations (C) delegates: alternates (D) term: holidays

Q.16 He is too …….to deceive

(A) bold (B) cunning (C) kind (D) honest

Q.17 Sadiq…….me of a boy I knew.

(A) remember (B) recall (C) recollect (D) reminds

Q.18 I have no……motive in offering this advice; I seek no personal advantage or honor.

(A) nominal (B) altruistic (C) incongruous (D) ulterior

Q.19 The opposite of monogamy is:

(A) bigamy (B) matrimony (C) polygamy (D) polyandry

Q.20 The……of wheat is increasing because of the green revolution.

(A) significance (B) variety (C) production (D) crop

Q.21 The similar word for rude is:

(A) rough (B) impolite (C) insulting (D) protected

Q.22 The problem must be studied …….all angles.

(A) from (B) with (C) for (D) in

Q.23 It began to rain without warning.

(A) all day long (B) all of a sudden (C) at every turn (D) none of these

Q.24 It is time we finished the job so that we can return home.

(A) wink at (B) work out (C) wound up (D) wipe of

Q.25 The firm has enjoyed steady…….in the last 10 years.

(A) enhancement (B) expansion (C) enlargement (D) extension

CHEMISTRY

WAIT FOR THE INSTRUCTIONS

ilm.com.pk

Q.26 Which of the following most likely represents the correct order of ion size from greatest to smallest?

(A) O^{2-} , F^- , Na^+ , Mg^{2+} (B) Mg^{2+} , Na^+ , F^- , O^{2-}

(C) Na^+ , Mg^{2+} , O^{2-} , F^- (D) Mg^{2+} , Na^+ , O^{2-} , F^-

Q.27 What is the empirical formula for a natural compound containing 58.6% oxygen, 39% sulfur and 2.4% hydrogen?

(A) HSO_3^- (B) HSO_4^- (C) H_2SO_3 (D) H_2SO_4

Q.28 Name the following compound: $Cu(ClO_4)_2$

(A) copper (I) chlorate (B) copper (I) perchlorate

(C) copper (II) chlorate (D) copper (II) perchlorate

Q.29 Which of the following species has an unpaired electron in its ground-state electronic configuration?

(A) Ne (B) Ca^+ (C) Na^+ (D) O^{2-}

Q.30 Hund's rule says that unpaired electrons in the same sub-shell:

(A) have paired spin (B) have parallel spin (C) occupy same orbital (D) cannot exist

Q.31 A 13 grams gaseous sample of an unknown hydrocarbon occupies a volume of 11.2 liter at S.T.P. What is the hydrocarbon?

(A) CH (B) C_2H_4 (C) C_2H_2 (D) C_3H_3

Q.32 If the density of a gas is given by ρ, which of the following expression represents the molecular weight of the gas?

(A) Pρ / RT (B) ρRT / P (C) nRT / Pρ (D) Pρ / nRT

Q.33 A force is applied to a container of a gas reducing its volume by half. The temperature of the gas:

(A) decreases (B) increases

(C) remain constant (D) depends upon the amount of force used

Q.34 At S.T.P one liter of which of the following gases contain most molecules?

(A) H_2 (B) He

(C) N_2 (D) Each has same no. of molecules

Q.35 As temperature is increased in an exothermic gaseous reaction, all of the following increase Except:

(A) reaction rate (B) rate constant

(C) activation energy (D) rms molecular velocity

Q.36 Which of the following substance is least soluble in water?

(A) NH_3 (B) NaCl (C) HSO_4^- (D) CCl_4

Q.37 Solution A has hydrogen ion concentration 6.0×10^{-5} mol/L and solution B has hydrogen ion concentration 1×10^{-7} mol/L. The pH of the solution A differs from solution B by:

(A) 1.3 (B) 2.8 (C) 3.7 (D) 5.0

Q.38 An aqueous solution of 0.1M HBr has pH of:

(A) 0 (B) 1 (C) 2 (D) 14

Q.39 What is the oxidation state of sulfur in HSO_4^- ?

(A) -2 (B) +3 (C) +6 (D) +7

Q.40 What is the reducing agent in following reaction: $2HCl + Zn \longrightarrow ZnCl_2 + H_2$

(A) Zn (B) Zn^{2+} (C) H^+ (D) Cl^-

Q.41 What type of intramolecular bonding is found in a CO molecule?

(A) covalent (B) ionic (C) hydrogen (D) Van der Waal's

Q.42 500J of work is done on a system which gives off 200J of heat. What will be the change in internal energy of the system?

(A) 700 (B) -700 (C) 300J (D) -300J

Q.43 Following reaction is carried out at 200 C and 500 atm. What will be the order of the reaction?

$2NO_2 \longrightarrow 2NO + O_2$

(A) 0 (B) 1 (C) 2 (D) 3

Q.44 Which of the following is not a nucleophile?

(A) OH^- (B) SH^- (C) H_2O (D) $AlCl_3$

Q.45 Grignard reagent forms tertiary alcohol when it reacts with:

(A) aldehyde (B) ketone (C) CO_2 (D) acetic acid

Q.46 What is the molecular formula of 2-methylbutanal?

(A) $C_4H_8O_2$ (B) $C_4H_{10}O$ (C) $C_5H_8O_2$ (D) $C_5H_{10}O$

Q.47 Ortho-nitrotoluene can be formed by:

(A) alkylation of benzene (B) alkylation of nitrobenzene

(C) nitration of benzene (D) nitration of toluene

Q.48 Ethene molecule contains;

(A) 2 π and 2 σ bonds (B) 2 π and 3 σ bonds

(C) 1 π and 4 σ bonds (D) 1 π and 5 σ bonds

Q.49 Which of the following statement is not correct for the chlorination of methane?

(A) It is a free radical reaction (B) It is a halogenation reaction

(C) It is a substitution reaction (D) It is an addition reaction

Q.50 Zwitterion is;

(A) a unit of electric charge (B) a unit of dipole moment

(C) an electrically charged ion (D) an electrically neutral ion

PHYSICS

WAIT FOR THE INSTRUCTIONS

ilm.com.pk

Q 51. If the magnitude of charges are doubled and distance between them is also doubled, the electric force _____

(A) Is Doubled (B) increases 4 times (C) Remains same (D) 0

Q 52. Calculate the root mean square of Hydrogen molecules at 800 K.

(A) 5138.42 m/s (B) 3268.42 m/s (C) 3158.42 m/s (D) zero

Q.53. When a P-N junction is reverse biased, it offers _____

(A) Zero resistance (B) maximum resistance

(C) minimum resistance (D) normal resistance

Q 54. A Force (15i – 16j + 27k) is added to the force (23j – 40k). What is the Magnitude of Resultant force?

(A) 29.04 (B) 21.04 (C) 30.04 (D) 25

Q.55 An electron moving at a rate of 2e+7 m/s in a uniform magnetic field. If the radius of the orbit is 0.0943 m, the magnitude of the magnetic field is _____

(A) 0.0012 T (B) 0.0024 T (C) 0.0036 T (D) 0.0048 T

Q 56. Displacement vector at 70^{o} have an x-component 450m? What is its y-component?

(A) 1236 (B) 12.36 (C) 450.36 (D) 123.6

Q.57. Ideally the efficiency of Carnot engine is _____, which mean its sink and source temperature/Heat is _____

(A) 100%, Different (B) 0%, same

(C) 100%, same (D) 50%, same

Q.58 A potential of 150volt is in between the 2 plates of a conductor, charge of 600 col is carried form one conductor to another, what is the work required and power to deliver it in 1.25s respectively?

(A) 9e4 joules, 7.2e-4 watt (B) 9e-4 joules, 7.2e4 watt

(C) 9e4 joules, 7.2e4 watt (D) None

Q.59. A car has a siren sounding 2000hz tone. What frequency will be detected by a stationary listener as the car approaching him at 80 km/h (v_s= 1200km/h

(A) 21.43khz (B) 2.143khz (C) 1900khz (D) 21430hz

Q.60 If α be the angle between conductor and the magnetic field, the force is directly proportional to _____

(A) Sin(α) (B) cos(α) (C) Tan(α) (D) Sin(α)

Q.61 Mangla Dam produces electricity from electric generator whose armature(S) are rotated by _____

(A) Fuel engine (B) waterfall Turbines

(C) steam energy (D) steam turbine

Q.62 Calculate the potential difference between 2 plates when they are separated by a difference of 0.005m and are able to hold an electron vertically motionless between them.

(A) 0.00279e-13 volts (B) 2.79e13 volts

(C) 2.79e-13 volts (D) 27.9e-13

Q.63 Compute the internal resistance of an electric generator having an emf of 120v and terminal voltage of 110v, supply current 20A?

(A) 39.2Ω (B) 0.50Ω (C)50Ω (D) 45 Ω

Q.64. A Galvanometer has a resistance of 50Ω and it defects full scale when a current of 10 milli ampere flows through it. It can be used to measure a current of 10 amperes by adding _____

(A) Series resistance of 0.05Ω (B) parallel resistance of 0.05Ω

(C) no resistance (D) 2 parallel resistance of 0.05Ω

Q.65. _____ is a process of splitting a nucleus which results in _____ of high energy.

(A) Fusion, Emission (B) radioactivity, absorption

(C) Fission, absorption (D) Fission, Emission

Q.66. The gradient of the Velocity time graph of a moving body is negative, the body experience _____

(A) Accelerating force (B) Retarding force

(C) No force (D) maximum force

Q.67. In order to decrease the antenna size for efficient use, _____ is done.

(A) demodulation (B) alteration (C) filtration (D) modulation

Q 68. Universal gas constant for 1 molecules/atom/ion of any gas is called _____.

(A) Avagadros's constant (B) Rydberg constant

(C) Boltzmann constant (D) molecular constant

Q.69. Radioactivity is the process of _____

(A) spontaneous emission of rays (B) emission of Alpha rays

(C) Emission of electron (D) absorption of rays

Q 70. Compute the power required to transfer 96kC of charge in 1hr through a potential rise of 50V.

(A) 1.3kW (B) 1.7kW (C) 0.9kW (D) 130W

Q.71 The Relation $\Delta V/\Delta R = v/d$ represents _____

(A) Electric Flux (B) Guass's law

(C) Electric intensity (D) Potential difference

Q 72. A glass is filled with 50 cm^3 of mercury at 18^oC. If the flask and its content are heated to 38^oC how much mercury will be above the mark?

$\alpha_{glass} = 9 \times 10^{-6}\ C^{-1}$, $\beta_{mercury} = 1.82 \times 10^{-6}\ C^{-1}$

(A) 0.15 cm^3 (B) 15 cm^3 (C) 1.5 cm^3 (D) 150cm^3

Q 73. During a complete cycle of thermodynamic process.

(A) $\Delta Q=0$ (B) $\Delta W=0$ (C) $\Delta U=0$ (D) $\Delta W=p\,\Delta\, v$

Q.74 A coil having an area of cross section 0.05 m^2 and number of turns 100, is placed perpendicular to the magnetic field of induction 0.08 weber/m^2. How much EMF will be induced in it if the field is reduced to 0.02 Weber/m^2 in 0.01 s?

(A) 20 volts (B) 25 volts (C) 30 volts (D) 35 volts

Q.75. A ball strikes a wall and returns back. Its average velocity will be zero because _____

(A) Time interval is very short (B) the time interval is too large

(C) displacement is infinite (D) displacement is zero

MATHEMATICS

WAIT FOR THE INSTRUCTIONS

ilm.com.pk

Q 76. Find real and imaginary parts of $\frac{\sqrt{3}+i}{\sqrt{3}-i}$

(A) $(\frac{1}{2},\frac{\sqrt{3}}{2})$ (B) (6,12) (C) 12, 6 (D) $(\frac{-1}{3},\frac{-2}{3})$

Q 77. $A \cap (B \cup C)$ = _____

(A) $(A \cap B) \cap (A \cap C)$ (B) $(A \cup B) \cup (A \cup C)$

(C) null set (D) $(A \cap B) \cup (A \cap C)$

Q 78. Set {x I x = p/q , x ε z and q ≠ 0} represents _____

(A) Irrational (B) Rational (C) Complex (D) Integers

Q 79. $\frac{1+2i}{3-4i} + \frac{2}{5}$ = _____

(A) $\frac{1}{2},\frac{\sqrt{3}}{2}$ (B) *6,12* (C) $\frac{i-2}{5i}$ (D) $\frac{-1}{3},\frac{-2}{3}$

Q 80. Value of k for which (x-2) is a factor of $x^3 - 4x^2 + kx + 2$ is _____

(A) 2 (B) 3 (C) 4 (D) 7

Q 81. $Ax^2 + bxy + cy^2 = 0$, the given equation is _____

(A) Linear in 2 variables (B) cubical in all variables

(C) quadratic in 2 variables (D) quadratic in 1 variable

Q 82. $\frac{1}{1-x} + \frac{5}{4} = \frac{1}{6-x}$, solution of the equation is _____

(A) {-2,-3} (B) {-2,-5} (C) {2,5} (D) {2}

Q 83. Value(s) of k for which $3x^2+5x+k = 0$ have complex roots is _____

(A) k=0 (B) k=25/15 (C) k<25/15 (D) k>25/12

Q 84. Solution of equation $\sqrt{(2x+7)} + \sqrt{(x+3)} = 1$ is _____

(A) {0,3} (B) {-1,3} (C) {3,-3} (D) None

Q 85. Demand and supply laws are D = $\frac{16}{p}$ + 9 and S = p + 3, the equilibrium price and equilibrium demand supply value is _____ (Hint : for equilibrium Demand = Supply)

(A) $4\sqrt{5}$,8 (B) -8,11 (C) 9, $4\sqrt{3}$ (D) 8,11

Q.86. What values must be excluded from the domain $f = \{(x,y): y = \frac{x+2}{x-2}\}$?

(A) 2 (B) - 2 (C) 0 (D) None

Q.87. Which of following is implicit function _____

(A) (a) $y = x^2 + 2x - 1$ (B) $x^2 + xy + y^2 = 0$

(C) $y = \sqrt{x-1}$ (D) None

Q.88. Measure of the angle from line having slope 'm' to a line with slope $\frac{1-m}{-m-1}$ is _____

(A) 225 (B) 135^o (C) 45 (D) None

Q.89. $\begin{bmatrix} \frac{sin\theta}{\sqrt{1-(sin\theta)^2}} & \frac{-cos\theta}{\sqrt{1-(cos\theta)^2}} \end{bmatrix} \cdot \begin{bmatrix} sin\theta & cos\theta \\ -cos\theta & sin\theta \end{bmatrix} =$ ____

(A) $3I_2$ (B) $2I_2$ (C) I_2 (D) I_3

Q.90. For a matrix A,C and any scalar quantity K, if A+A = C, then KA+KA is _____

(A) KC (B) K^2C (C) 2KC (D) None

Q.91. lim $x \to 0$ $(3x^3-2x^2+x) / (4x^2+2x)$ = _____

(A) 0 (B) ∞ (C) ¼ (D) ½

Q.92. lim $x \to 0$, when f(x) = $\frac{\sqrt{1+x} - \sqrt{1-x}}{x}$ is _____

(A) 0 (B) ∞ (C) -1 (D) 1

Q.93. lim $t \to \infty$, when f(t) = $\frac{(t^2+t-1)}{(2t+5)}$ is _____

(A) 1 (B) -∞ (C) ∞ (D) 2

Q.94. Find $\frac{dy}{dx}$ when $x^y.y^x = 1$

(A) $lny + y/x$ (B) $lnx + x/y$ (C) $\left(\frac{lny + y/x}{lnx + x/y}\right)$ (D) $-\left(\frac{lny + y/x}{lnx + x/y}\right)$

Q.95. If n A.M's are inserted between 1 and -50 and the sixth mean is -5; find n.

(A) 52 (B) 50 (C) 52 (D) 50.5

Q.96. Find the sum of all natural numbers between 1 and 100 which are not exactly divisible by 3 or 7.

(A) 2840 (B) 2860 (C) 5000 (D) 2842

Q 97. Insert one HM between 1/3 and 2/5.

(A) 11/4 (B) ±√2/15 (C) 4/11 (D) None

Q 98. For any 2 real positive unequal numbers _____

(A) AM < GM < HM (B) AM > GM > HM

(C) AM = GM > HM (D) AM = GM = HM

Q 99. The number of permutations of word "ARRANGEMENT" is:

(A) 2 (B) 4 (C) 39916800 (D)2494800

Q 100. From 8 boys and 5 girls 2 representatives are to be selected, Find the probability of selecting a one boy and a one girl.

(A) 40/13C2 (B) 13P2/13C2 (C) 8P1x5P1/13P2 (D) 8C1x5C1/13C2

ANSWER KEY

Pre-Entry Test 2010

Q.1. (C)	Q.26. (A)	Q.51. (C)	Q.76. (A)
Q.2. (D)	Q.27. (C)	Q.52. (C)	Q.77. (D)
Q.3. (C)	Q.28. (D)	Q.53. (B)	Q.78. (B)
Q.4. (C)	Q.29. (B)	Q.54. (B)	Q.79. (D)
Q.5. (B)	Q.30. (B)	Q.55. (A)	Q.80. (B)
Q.6. (B)	Q.31. (C)	Q.56. (A)	Q.81. (C)
Q.7. (A)	Q.32. (B)	Q.57. (D)	Q.82. (C)
Q.8. (B)	Q.33. (B)	Q.58. (C)	Q.83. (D)
Q.9. (C)	Q.34. (D)	Q.59. (B)	Q.84. (D)
Q.10. (C)	Q.35. (C)	Q.60. (A)	Q.85. (D)
Q.11. (B)	Q.36. (D)	Q.61. (B)	Q.86. (A)
Q.12. (C)	Q.37. (B)	Q.62. (C)	Q.87. (D)
Q.13. (B)	Q.38. (B)	Q.63. (B)	Q.88. (C)
Q.14. (D)	Q.39. (C)	Q.64. (B)	Q.89. (C)
Q.15. (B)	Q.40. (A)	Q.65. (D)	Q.90. (A)
Q.16. (D)	Q.41. (A)	Q.66. (B)	Q.91. (D)
Q.17. (D)	Q.42. (C)	Q.67. (D)	Q.92. (D)
Q.18. (D)	Q.43. (C)	Q.68. (C)	Q.93. (C)
Q.19. (C)	Q.44. (D)	Q.69. (A)	Q.94. (D)
Q.20. (A)	Q.45. (B)	Q.70. (A)	Q.95. (B)
Q.21. (B)	Q.46. (D)	Q.71. (C)	Q.96. (D)
Q.22. (A)	Q.47. (D)	Q.72. (A)	Q.97. (C)
Q.23. (B)	Q.48. (D)	Q.73. (C)	Q.98. (B)
Q.24. (C)	Q.49. (D)	Q.74. (C)	Q.99. (D)
Q.25. (B)	Q.50. (D)	Q.75. (D)	Q.100. (D)

ilm.com.pk