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KARACHI

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ANEES HUSSAIN

EXCELLENCE IN EDUCATION SINCE 1989



UNIVERSITY OF KARACHI PAST PAPER

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DEPTT. OF COMPUTER SCIENCE
University of Karachi

B.S. COMPUTER SCIENCE PROGRAM

ADMISSION TEST I

H.S. (COMPUTER SCIENCE)
MATHEMATICS
WINNING TEST

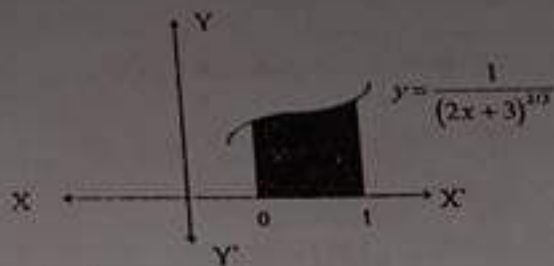
- Real part of $(2x - 3yi)^4$ is :
 A. $16x^4 - 216x^2y^2 + 81y^4$
 B. $16x^4 + 216x^2y^2 + 81y^4$
 C. $16x^4 + 216x^2y^2 - 81y^4$
 D. None of these
- Cube roots of a^3 are :
 A. a, aw, aw^2
 B. $a, \frac{-a \pm a\sqrt{3}}{2}$
 C. a, aw^2, aw
 D. All of the above
- If α, β are the roots of the equation $2x^2 + 3x + 4 = 0$, then the equation whose roots are $\frac{\alpha}{\beta}$ and $\frac{\beta}{\alpha}$ is :
 A. $8x^2 + 7x + 8 = 0$
 B. $3x^2 + 4x + 3 = 0$
 C. $4x^2 + 3x + 8 = 0$
 D. $6x^2 + 5x + 3 = 0$
- If $\begin{bmatrix} -2 & 3 \\ 4 & -1 \end{bmatrix} \cdot \begin{bmatrix} 1 & x & 5 \\ 2 & 4 & x \end{bmatrix} \cdot \begin{bmatrix} -3 \\ 1 \\ 0 \end{bmatrix} = \begin{bmatrix} 2 & -14 \end{bmatrix}$
 then the value of x is :
 A. $\frac{1}{2}$
 B. $\frac{1}{3}$
 C. $-\frac{1}{2}$
 D. $-\frac{1}{3}$
- The value of k for which the given matrix becomes singular is :

$$\begin{bmatrix} 5 & 8 & 2 \\ 0 & k & 2 \\ 9 & -8 & 4 \end{bmatrix}$$

 A. -234
 B. 112
 C. -179
 D. $-3/2$
- Sum to n terms of :
 $\left(1 - \frac{1}{n}\right) + \left(1 - \frac{2}{n}\right) + \left(1 - \frac{3}{n}\right) + \dots$
 A. $\frac{n-1}{2}$
 B. $\frac{n(n+1)}{2}$
 C. $\frac{n(n+1)}{2}$
 D. $\frac{3n-1}{2}$
- The sum of 3 numbers in AP is 30 and the Product of the extremes is 96, then the three numbers are :
 A. 8, 10, 12
 B. 10, 12, 14
 C. 6, 8, 10
 D. 12, 14, 16

DON'T TALK OR WRITE
ANYTHING

8. How many signals can be made with five flags of different colours, by listing 1 or 2 or 3 or 4 or 5, one above the other?
- A. 60
B. 120
C. 5
D. 325
9. In how many ways can 5 books on software and 4 books on hardware be placed on a shelf so that the books of the same subject always remain together?
- A. 5760
B. 6540
C. 2320
D. 8285
10. Find n if:
- $${}^{2n+1}P_{n+1} : {}^{2n+1}P_n = 3:5$$
- A. 6
B. 2
C. 4
D. 18
11. The term independent of x in $\left(x - \frac{1}{x^2}\right)^{2n+1}$ is (where $n = 7$)
- A. -3000
B. -3003
C. -8064
D. None of these
12. The points A(4, 1), B(5, 7), C(6, 13) are:
- A. Collinear
B. Non - Collinear
C. Linear
D. Bilinear
13. $\sin 15^\circ = ?$
- A. $\frac{\sqrt{3}-1}{2}$
B. $\frac{\sqrt{3}-1}{\sqrt{2}}$
C. $\frac{\sqrt{3}-1}{2\sqrt{2}}$
D. $\sqrt{3}-1$
14. The period of the function $f(x) = \sin x + \cos x$ is
- A. π
B. $\pi/2$
C. $\pi/2$
D. 2π
15. If $1 - \cos \theta = 1/2$ then θ will be:
- A. $\frac{\pi}{3}, \frac{5\pi}{3}$
B. $\frac{\pi}{2}, \frac{\pi}{2}$
C. $\frac{\pi}{6}, -\frac{\pi}{6}$
D. None of these
16. $\lim_{x \rightarrow 0} \left(\frac{e^x - 1}{x} \right) = ?$
- A. $1/e$
B. 0
C. e
D. 1
17. If $f(x) = a \cos x + b \sin x$ then $\frac{d^2y}{dx^2}$ is:
- A. $-f(x)$
B. $-f(y)$
C. $-x$
D. $f(x)$



Area of shaded portion is :

- A. $\frac{3}{2}(3\sqrt{5} - 3\sqrt{3})$ unit
 B. 0 unit
 C. $\frac{3}{2}\sqrt{5} - \frac{3}{2}\sqrt{3}$ unit
 D. $\frac{3\sqrt{2} - 3\sqrt{5}}{3\sqrt{3}}$ unit

19. $\int_{\pi/6}^{\pi/3} \cot^2 2x \operatorname{cosec}^2 x \, dx$

- A. $\frac{\sqrt{3}}{27}$
 B. $\frac{3}{25}$
 C. $\sqrt{3}$
 D. $3\sqrt{3}$

20. Solution of the differential equation $\frac{dy}{dx} = 3x^2 - \frac{3}{\sqrt{x}}$; $y(x) = 20$ is :

- A. $y = x^3 - 6\sqrt{x} - 32$
 B. $y = x^3 - 32$
 C. $y = x^3 - 6\sqrt{x}$
 D. None of these

21. Value of :

$$\sin \frac{\pi}{3} \cos \frac{\pi}{6} - \cos \frac{\pi}{6} \sin \frac{\pi}{3} \text{ is :}$$

- A. $1/2$
 B. $\frac{\sqrt{3}}{2}$
 C. $\frac{2\sqrt{3}}{3}$
 D. $\frac{\sqrt{3}+1}{\sqrt{2}}$

22. The position vectors of point P and Q are give by :

$$\vec{R}_1 = 2\hat{i} + 3\hat{j} - \hat{k}$$

$$\vec{R}_2 = 4\hat{i} + 3\hat{j} + 2\hat{k}$$

Determine PQ in terms of $\hat{i}, \hat{j}, \hat{k}$

- A. $6\hat{i} - 3\hat{j} + 9\hat{k}$
 B. $2\hat{i} - 6\hat{j} + 3\hat{k}$
 C. $3\hat{i} - 2\hat{j} + \hat{k}$
 D. $4\hat{i} - 6\hat{j} - 8\hat{k}$

23. What is the probability that a vowel selected at random in an english book is an "e" ;

A. $\frac{5}{26}$

B. $\frac{2}{27}$

C. $\frac{1}{5}$

D. None of these

24. $\int_0^1 \ln x \, dx = ?$

A. 1

B. 2

C. 0

D. None of these

25. In which quadrant does z lies $z = -2 + 3i$

A. First

B. Second

C. Third

D. Fourth

.....

B.S. (COMPUTER SCIENCE)

MATHEMATICS

WINNING TEST - 1

ANSWER KEY

- | | | | |
|-----|---|-----|---|
| 1. | A | 14. | D |
| 2. | D | 15. | A |
| 3. | A | 16. | D |
| 4. | A | 17. | A |
| 5. | B | 18. | A |
| 6. | A | 19. | A |
| 7. | A | 20. | A |
| 8. | D | 21. | A |
| 9. | A | 22. | B |
| 10. | C | 23. | A |
| 11. | B | 24. | D |
| 12. | A | 25. | B |
| 13. | C | | |

KARACHI UNIVERSITY I
COMPUTER

1. _____ was designed to solve certain mathematical equations.
(A) Pascal (B) EDSAC
(C) Atanasoff - Berry (D) Mark I
2. Mark I was designed by _____.
(A) Howard (A) Aiken (B) Blaise Pascal
(C) John Atanasoff (D) Clifford Berry
3. The first generation of computer started from _____ and used _____.
(A) 1940 - 1960, Circuits (B) 1940 - 1956, Transistors
(C) 1940 - 1956, Vacuum Tubes (D) None of the Above
4. The second generation of computer started from _____ and used _____.
(A) 1960 - 1965, Transistors (B) 1956 - 1963, Transistors
(C) 1960 - 1963, Transistors (D) None of the above
5. The third generation of computer started from _____ and used _____.
(A) 1965 - 1970, Electronic Tubes (B) 1963 - 1971, Integrated Circuits
(C) 1965 - 1969, Transistors (D) None of the above
6. _____ are machines midway in cost and capability between microcomputers and mainframes.
(A) Minicomputers (B) Super Computers
(C) Servers (D) None of the above
7. Today's fastest computers are called _____.
(A) mega computers (B) terminals
(C) supercomputers (D) CPUs
8. Minicomputers can be used as _____.
(A) Single - User workstations (B) Multi - User workstations
9. _____ are high-capacity machines that require special air-conditioned rooms and are the fastest calculating devices ever invented.
(A) Super Computers (B) Mainframes
(C) Miniframes (D) All of the above
10. A _____ is a central computer that holds databases and programs for many PCs, workstations, or terminals.
(A) Mainframe (B) Server
(C) Client (D) None of the above
11. Which type of system would most likely be used by scientists to analyze the effects of global warming?
(A) A supercomputer (B) A mainframe computer
(C) The World Wide Web (D) A portable computer
12. A bit represents ____ & _____.
(A) 0,1 (B) 1,2
(C) -1,0 (D) None of the above

KARACHI UNIVERSITY I
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12. A bit represents ____ & _____.
(A) 0,1 (B) 1,2
(C) -1,0 (D) None of the above

13. One nibble equals
 - (A) 4 bits
 - (B) 2 bits
 - (C) 128 bytes
 - (D) None of the above
14. One million bytes equals
 - (A) 1 Kilobyte
 - (B) 1 Megabyte
 - (C) 1 Gigabyte
 - (D) None of the above
15. The fifth generation of computer is based on
 - (A) PASCAL
 - (B) Artificial Intelligence
 - (C) Transistors
 - (D) None of the above
16. One of the operating system's functions is to manage the way information is stored on and retrieved from disks.
 - (A) True
 - (B) False
17. A utility program can be used to improve the function of an operating system in some way.
 - (A) True
 - (B) False
18. Which of the following is not an example of a utility program?
 - (A) Backup software
 - (B) Screen saver
 - (C) Operating system
 - (D) Antivirus program
19. Which of the following would not be considered hardware?
 - (A) an operating system
 - (B) a CPU
 - (C) a keyboard
 - (D) a disk
20. DOS stands for
 - (A) Denial of Service
 - (B) Disk Operating System
 - (C) Disk Opening System
 - (D) Disk of Service

DEPARTMENT OF COMPUTER SCIENCE**COMPUTER****ANSWER KEY**

1	C	14	B
2	A	15	B
3	C	16	A
4	B	17	A
5	B	18	C
6	A	19	A
7	C	20	B
8	A		
9	A		
10	B		
11	A		
12	A		
13	A		

KARACHI UNIVERSITY I
GENERAL KNOWLEDGE

1. First Afghan War took place in

- (A) 1839
- (B) 1840
- (C) 1833
- (D) 1848

2. Gulf cooperation council was originally formed by

- (A) Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates
- (B) Second World Nations
- (C) Third World Nations
- (D) Fourth World Nations

3. First China War was fought between

- (A) China and Britain
- (B) China and France
- (C) China and Egypt
- (D) China and Greek

4. Dumping is

- (A) selling of goods abroad at a price well below the production cost at the home market price
- (B) the process by which the supply of a manufacture's product remains low in the domestic market, which batches him better price
- (C) prohibited by regulations of GATT
- (D) All of the above

5. First Indo-Pak war was started in the year

- (A) 1947
- (B) 1948
- (C) 1949
- (D) 1950

6. Federation Cup, World Cup, Allywyn International Trophy and Challenge Cup are awarded to winners of

- A. Tennis (B) Basketball (C) Volleyball (D) Cricket

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KARACHI UNIVERSITY I

7. Each year World Red Cross and Red Crescent Day is celebrated on

- (A) May 8
- (B) May 18
- (C) June 8
- (D) June 18

8. Famous sculptures depicting art of love built some time in 950 AD – 1050 AD are

- (A) Khajuraho temples
- (B) Jama Masjid
- (C) Sun temple
- (D) Mahabalipuram temples

9. Friction can be reduced by changing from

- (A) sliding to rolling
- (B) rolling to sliding
- (C) potential energy to kinetic energy
- (D) dynamic to static

10. Fire temple is the place of worship of which of the following regions?

- (A) Taoism
- (B) Judaism
- (C) Zoroastrianism (Parsi Religion)
- (D) Shintoism

11. Georgia, Uzbekistan and Turkmenistan became the members of UNO in

- (A) 1991
- (B) 1992
- (C) 1993
- (D) 1994

12. During World War II, when did Germany attack France?

- (A) 1940
- (B) 1941
- (C) 1942
- (D) 1943

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13. The ozone layer restricts

- (A) Visible light
- (B) Infrared radiation
- (C) X-rays and gamma rays
- (D) Ultraviolet radiation

14. Eugenics is the study of

- (A) altering human beings by changing their genetic components
- (B) people of European origin
- (C) different races of mankind
- (D) genetic of plants

15. Euclid was

- (A) Greek mathematician
- (B) Contributor to the use of deductive principles of logic as the basis of geometry
- (C) Propounded the geometrical theorems
- (D) All of the above

DEPARTMENT OF COMPUTER SCIENCE

GENERAL KNOWLEDGE

ANSWER KEY

1	A	14	A
2	A	15	D
3	A		
4	D		
5	A		
6	C		
7	A		
8	A		
9	A		
10	C		
11	B		
12	A		
13	D		

PHYSICS

The particles of Gamma radiation's are:

- (A) Photons
(B) Electrons
(C) Protons
(D) Helium

Stokes law hold for:

- (A) Bodies of all shapes
(B) Motions through free space
(C) Horizontal motion of the particle
(D) Motion through a viscous medium

A balloon contains 500 m^3 of helium at 27°C and 1 atmosphere pressure. The volume of the helium at -3°C temperature and 0.5 atmosphere pressure will be

- (A) 500 m^3
(B) 700 m^3
(C) 900 m^3
(D) 1000 m^3

A Solar cell is used to convert:

- (A) Electrical energy in to mechanical energy
(B) Electrical energy to light energy
(C) Light energy to electrical energy
(D) Light energy in to sound energy

Two sirens situated 1 km apart are producing sound of frequency 330Hz . An observer start moving from one siren to the other with a speed of 2 ms^{-1} . if the speed of sound be 330 ms^{-1} what will be the beat frequency heard by the observer?

- (A) 8
(B) 4
(C) 6
(D) 1

To make an N-type semiconductor which of the following are used for doping:

- (A) trivalent elements
(B) tetravalent elements
(C) pentavalent elements
(D) silicon

For capacitors connected in series:

- (A) The difference of potential is the same for all
(B) The charge on each is the same
(C) The resultant capacitance is greater than the sum of the individual capacitance
(D) The resultant capacitance is equal to the sum of the individual capacitance

The law that governs the forces between electric charges was given by:

- (A) Faraday
(B) Newton
(C) Ampere
(D) Coulomb

The apparatus used to compare the emf. Of two cells is:

- (A) a wheatstone bridge
(B) a galvanometer
(C) a potentiometer
(D) an ammeter

10. In three dimensional spaces, the position vectors of points is given by:

(A) $\vec{r} = 0 + y\hat{j} + z\hat{k}$

(B) $\vec{r} = x\hat{i} + y\hat{j} + 0$

(C) $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$

(D) $\vec{r} = y\hat{j} + z\hat{k}$

11. When capacitance C_1 , C_2 , & C_3 are connected in parallel, the net capacitance 'C' is:

(A) $C = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}$

(B) $C = \frac{C_1 + C_2 + C_3}{C_1 \times C_2 \times C_3}$

(C) $\frac{1}{C} = C_1 + C_2 + C_3$

(D) $C = C_1 + C_2 + C_3$

12. One end of a metal rod is placed in a Bunsen flame very soon the other end becomes hot

(A) Conduction

(B) Convection

(C) Radiation

(D) Insulation

13. A wire is heated to a high temperature and electrons are given off. This is known as:

(A) Photo Electricity

(B) Fluorescence

(C) Phosphorescence

(D) Thermionic Emission

14. Which of the following is transmitted by a wave:

(A) Energy

(B) Medium

(C) Momentum

(D) Both (A) and (C)

15. Which reaction gives more energy?

(A) nuclear fission

(B) nuclear fusion

(C) burning of coal

(D) none of above

DEPARTMENT OF COMPUTER SCIENCE

PHYSICS

ANSWER KEY

1	A	14	D
2	D	15	C
3	C		
4	C		
5	B		
6	C		
7	B		
8	D		
9	C		
10	C		
11	D		
12	A		
13	D		

DEPARTMENT OF COMPUTER SCIENCE**PHYSICS****ANSWER KEY**

1	A	14	D
2	D	15	C
3	C		
4	C		
5	B		
6	C		
7	B		
8	D		
9	C		
10	C		
11	D		
12	A		
13	D		

ENGLISH

1. A street named _____ mayor of the town.
(A) after (B) as (C) for (D) by
2. This money will be reserved _____ charitable purposes.
(A) to (B) for (C) at (D) in
3. I am just a little girl _____ Little Rock.
(A) from (B) with (C) along (D) for
4. Room 64 was half way _____ on the right.
(A) towards (B) across (C) along (D) off
5. The whole nation was _____ the president.
(A) behind (B) after (C) before (D) for
6. She said, "I am too weak to walk."
(A) She said that I was too weak to walk.
(B) She said that she was so weak to walk.
(C) She said that she was too week to walk.
(D) She said that she was too weak to walk.
7. Amir said to me, "Thank you very much for your kind help today."
(A) Amir thanked him very much for my kind help that day.
(B) Amir thanked me very much for his kind help that day.
(C) Amir thanked me very much for my kind help that day.
(D) Amir thanked me very much for my kind help today.
8. He said, "How is your health now?"
(A) He asked how his health was then.
(B) He asked how my health was then.
(C) He asked how my health is then.
(D) He asked how my health was now.
9. "Are you going to join school today?" said the mother to the boy.
(A) The mother asked the boy weather he was going to join school that day.
(B) The mother asked the boy whether I was going to join school that day.
(C) The mother asked the boy whether he was going to join school that day.
(D) The mother asked the boy whether he was going to join school today.
10. "What is your name and who are you?" said the policeman.
(A) The policeman asked what my name was and who I was.
(B) The policeman asked what his name was and who I was.
(C) The policeman asked what my name is and who I was.
(D) The policeman asked what my name was and who I was.

PASSAGE: Answer Questions 11 - 15 based on the following passage

Lew Archer, the detective hero created by Rose Mac Donald in "The Moving Target" (1949), is more literary in the tastes than Mike Hammer, and so more apt to muse on fate and the past than to create a political philosophy out of the individualist fantasies of the present. In part Archer owes his special sensitivity to the fact that his creator placed him in the hastily thrown up world of California and the west coast rather than in the grimy eastern cities of Spillane and Hammer. Attuned to history as much as to action, Archer is more fascinated by the past patterns of relationships that erupt into the present than by the immediacies of violence and personal confrontation. Like other American naturalists, both Archer and Hammer pride themselves on their ability to be known in all the parts of town and country. But Mac Donald explores what Spillane essentially disregards the intricacies of family and the gradation of social class. This Spillane's hero seems to spring from Hammer and Hemingway, while Mac Donald's Archer owes his linkage to Chandler and Faulkner.

11. What is the author's main purpose in the passage?
- (A) To explain the plot of the Moving Target
 - (B) To show the importance of setting in the detective novel
 - (C) To prove that Archer and Hammer are literary heroes
 - (D) To compare two characters in detective fiction
12. In the second sentence of the passage the word "creator" refers to a
- (A) Fantastist
 - (B) Naturalist
 - (C) Writer
 - (D) Philosopher
13. Which of the following is LEAST likely to be characteristic of an Archer story?
- (A) A violent argument
 - (B) A California setting
 - (C) A concern with social class
 - (D) A study of family relationship
14. Which of the following best describes Mac Donald's relationship to Chandler and Faulkner?
- (A) Mac Donald portrayed the lives of Chandler and Faulkner in one of his novel.
 - (B) Mac Donald followed in the tradition of Chandler and Faulkner.
 - (C) Mac Donald influenced the work of Chandler and Faulkner.
 - (D) Mac Donald disregarded the intricacies of Chandler and Faulkner.
15. The paragraph preceding the passage probably discussed the writing of which of the following individuals?
- (A) Hemingway
 - (B) Chandler
 - (C) Spillane
 - (D) Faulkner

DEPARTMENT OF COMPUTER SCIENCE**ENGLISH****ANSWER KEY**

1	A	14	B
2	B	15	C
3	A		
4	C		
5	A		
6	D		
7	C		
8	B		
9	C		
10	A		
11	D		
12	C		
13	A		

DEPTT. OF COMPUTER SCIENCE
University of Karachi

B.S. COMPUTER SCIENCE PROGRAM

ADMISSION TEST II

B.S. (COMPUTER SCIENCE)
MATHEMATICS
WINNING TEST

1. $Z + \bar{Z}$ is:

- A. An Imaginary number
B. A real number
C. If $z = x + iy$ then it is $2x$
D. Both C both

2. $2 + w^2 = 7$:

- A. $\frac{1}{w}$
B. $\frac{3}{2+w}$
C. $\frac{3}{2w}$
D. $\frac{1}{1+w}$

3. If α, β are the roots of $px^2 + qx + r = 0, p \neq 0$, then equation whose roots are $\frac{1}{\alpha}, \frac{1}{\beta}$

- A. $rx^2 + qx + p = 0$
B. $r^2x^2 + (3pqr - q^2)x + p^3 = 0$
C. $px^2 + qx + r = 0$
D. None of these

4. $\begin{bmatrix} \sin \theta & -\cos \theta \\ \cos \theta & \sin \theta \end{bmatrix} \begin{bmatrix} \sin \theta & \cos \theta \\ -\cos \theta & \sin \theta \end{bmatrix} = ?$

- A. I_2
B. O_2
C. I_3
D. O_3

5. A group $(G, *)$ is said to be an abelian group if $*$ is _____ on G .

- A. Associative
B. Commutative
C. Distributive
D. None of the above

6. The base of a right angled triangle is 9 cm and the sides of the triangle are in AP, find the hypotenuse.

- A. 11.25 cm or 15 cm
B. 16.25 cm or 20 cm
C. 9.25 cm or 13 cm
D. 12.25 cm or 16 cm

7. A machine is depreciated at the rate of 10% on reducing balance the original cost was Rs. 10,000, after how many years it will be valued at Rs. 6,561.

- A. 6 years
B. 2 years
C. 4 years
D. 3 years

8. Department of computer science consist of 4 professors and 8 students. A study tour is to be arranged. In how many ways can a party of 4 be chosen so as to include at least 1 professor.

- A. 625
B. 325
C. 425
D. None of these

9. A room has three lamps. from a collection of stand light bulbs of which 6 are not good, a person select 3 at random and puts them in the sockets. What is the probability that they will have light.

- A. $\frac{6}{14}$
B. $\frac{5}{6}$
C. $\frac{7}{9}$
D. $\frac{13}{21}$

the horses are running the same race.

A. $\frac{1}{2}$
C. $\frac{6}{8}$

B. $\frac{4}{9}$
D. $\frac{7}{15}$

11. The coefficient of y^{-2} in the expansion of $(y + \frac{b^3}{y^4})^{10}$ is:

A. $210b^{10}$
C. $210b^{12}$

B. $210b^{13}$
D. $-210b^{12}$

12. $\tan^{-1} \theta + \cot^{-1} \theta = ?$

A. $\cos^{-1} \sqrt{1-\theta^2}$

B. $\sin^{-1} \frac{\theta}{\sqrt{1+\theta^2}}$

C. $\frac{\pi}{2}$

D. $\frac{\pi}{\sqrt{1+\theta^2}}$

13. If $2 \sin \theta + 2\sqrt{2} \sin \theta = 3$ then θ will be:

A. $\frac{\pi}{4}$

B. $\frac{\pi}{2}$

C. $\frac{\pi}{3}$

D. $\frac{\pi}{6}$

14. Range of $f(x) = \cos^{-1} x$ is:

A. $0 \leq \theta \leq \pi$

B. $-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$

C. $-\pi \leq \theta \leq \pi$

D. $0 \leq \theta \leq 2\pi$

15. If $A = \{-10, -5, 8, -\frac{1}{3}, 15, 21\}$ then an upper bound of A is:

A. $x \geq 21$
C. $x < 21$

B. $x > 21$
D. $x \leq 21$

16. Define $f: R \rightarrow R$ by $f(x) = \begin{cases} 0 & \text{when } x \in Q \\ 1 & \text{when } x \in R - Q \end{cases}$ then the range is:

A. $(0, 1)$
C. $(-\infty, 0)$

B. $(-\infty, +\infty)$
D. $(1, +\infty)$

17. A point moves so that its distance from the origin is always 3 units of length equation of the path traced by the point is:

A. $x + y = 3$
C. $y^2 = 3$

B. $x^2 = 3$
D. $x^2 + y^2 = 9$

18. $\lim_{t \rightarrow \infty} \frac{\ln(1+e^{-t})}{t} = ?$

A. e^3

B. e
D. $\frac{1}{e}$

C. e^2

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19. Let $f, g: \mathbb{R} \rightarrow \mathbb{R}$ be functions defined by $f(x) = \sin x$ and $g(x) = \cos x$. Which one of the following statements is correct?

- A. f, g are continuous at 0 and $\theta = \phi = 0$
- B. f, g are not continuous at 0 and $\theta = \phi = 0$
- C. f, g are continuous at 0 and $\theta = \phi = \frac{\pi}{2}$
- D. f, g are continuous at 0 and $\theta = \phi = \pi$

20. $\frac{d}{dx} \left\{ \frac{1}{2} x \sqrt{x^2 - a^2} - \frac{1}{2} a^2 \ln(x + \sqrt{x^2 - a^2}) \right\}$

- A. $\sqrt{x^2 - a^2}$
- B. $\frac{1}{\sqrt{a^2 - x^2}}$
- C. $\sqrt{a^2 - x^2}$
- D. $\frac{1}{x\sqrt{x^2 - a^2}}$

21. $\int x^2 e^x dx$

- A. $e^x (x-1)^2 + c$
- B. $e^x (x+1) + c$
- C. $e^x (x-1) + c$
- D. $\frac{e^{2x-1}}{x}$

22. The distance between foci of hyperbola when length of latus rectum = $\frac{64}{3}$ and $e = \frac{5}{3}$

- A. 10
- B. 20
- C. 60
- D. 80

23. $\lim_{x \rightarrow 0} \frac{1 - \cos 5x}{1 - \cos 7x}$

- A. $\frac{25}{49}$
- B. $\frac{49}{25}$
- C. 0
- D. None of these

24. A function f is defined by

$f: x \mapsto px + q$, given that

$f(1) = -5$ and $f(-2) = -10$ then the value of p and q is

- A. $5/3, -20/3$
- B. $5/3, 7/3$
- C. $5/3, 10/3$
- D. $5/3, 20/3$

25. $[a+b, b+c, c+a] = ?$

- A. $2[a, b, c]$
- B. $[a, b, c]$
- C. $[a, b+c, c]$
- D. $[2a, b, c]$

MATHEMATICS
WINNING TEST - 2

ANSWER KEY

- | | | | |
|-----|---|-----|---|
| 1. | D | 14. | A |
| 2. | B | 15. | A |
| 3. | A | 16. | A |
| 4. | A | 17. | D |
| 5. | B | 18. | A |
| 6. | A | 19. | D |
| 7. | C | 20. | A |
| 8. | C | 21. | A |
| 9. | B | 22. | B |
| 10. | A | 23. | D |
| 11. | C | 24. | A |
| 12. | C | 25. | A |
| 13. | A | | |

COMPUTER

1. Decimal number 10 is binary number _____.
 (A) 10 (B) 2
 (C) 1000 (D) 1100
2. Decimal number 20 is hexadecimal number _____.
 (A) F1 (B) F1
 (C) 14 (D) 1F
3. Binary number 1001 is decimal number _____.
 (A) 5 (B) 9
 (C) 10 (D) 11
4. Binary number 1001 is hexadecimal number _____.
 (A) 5 (B) 9
 (C) A (D) B
5. Hexadecimal number A1 is decimal number _____.
 (A) 100 (B) 101
 (C) 161 (D) 163
6. _____ converts letters, numbers, and symbols into electrical signals which are machine readable.
 (A) Mouse (B) Keyboard
 (C) Light Pen (D) Printer
7. The standard keyboard has 101 keys.
 (A) True (B) False
8. If you click an item on the screen and use the mouse to move it around, this action is called _____.
 (A) Pulling (B) Pushing
 (C) Drugging (D) Dropping
9. The odd man out is _____.
 (A) Sensors (B) Scanning Devices
 (C) Human Body Input Devices (D) Plotters
10. In most programs, you can open a screen of help information by pressing the F1 key.
 (A) True (B) False
11. Data on a diskette is stored on diskettes in _____.
 (A) Track (B) Sectors
 (C) Density (D) Spots
12. _____ sets the disk up, organizing it into tracks and sectors; it creates a directory on the disk, and checks for bad spots.
 (A) Formatting (B) Fragmentation
 (C) Disk Checking (D) Scan Disk

13. Magnetic disks must be formatted before they can store data.
(A) True
(B) False
14. A computer's CD-ROM drive can read data disks, but it cannot play audio CDs.
(A) True
(B) False
15. A standard compact disk can hold how much data?
(A) 150 MB
(B) 350 MB
(C) 650 MB
(D) 850 MB
16. Record is a collection of related
(A) Files
(B) Databases
(C) Fields
(D) None of the above
17. A file is a collection of related
(A) Files
(B) Databases
(C) Fields
(D) Records
18. A database is an organized collection of integrated files
(A) Files
(B) Databases
(C) Fields
(D) Records
19. _____ files are files containing software instructions
(A) Program
(B) Data
(C) Image
(D) None of the above
20. _____ files are files containing data
(A) Program
(B) Data
(C) Image
(D) None of the above

DEPARTMENT OF COMPUTER SCIENCE**COMPUTER****ANSWER KEY**

1	B	14	B
2	D	15	C
3	B	16	C
4	B	17	D
5	C	18	A
6	B	19	A
7	A	20	B
8	C		
9	D		
10	A		
11	A		
12	A		
13	A		

KARACHI UNIVERSITY 2
GENERAL KNOWLEDGE

1. Ecology deals with

- (A) Birds
- (B) Cell formation
- (C) Relation between organisms and their environment
- (D) Tissues

2. DRDL stands for

- (A) Defence Research and Development Laboratory
- (B) Department of Research and Development Laboratory
- (C) Differential Research and Documentation Laboratory
- (D) None of the above

3. Escape velocity of a rocket fired from the earth towards the moon is a velocity to get rid of the

- (A) Earth's gravitational pull
- (B) Moon's gravitational pull
- (C) Centripetal force due to the earth's rotation
- (D) Pressure of the atmosphere

4. For safety, the fuse wire used in the mains for household supply of electricity must be made of metal having

- (A) low melting point
- (B) high resistance
- (C) high melting point
- (D) low specific heat

5. Hamid Karzai was chosen president of Afghanistan in

- (A) 2000
- (B) 2001
- (C) 2002
- (D) 2003

6. Durand Cup is associated with the game of
- (A) Cricket (B) Football
- (C) Hockey (D) Volleyball
7. Headquarters of UNO are situated at
- (A) New York, USA
- (B) Hague (Netherlands)
- (C) Geneva
- (D) Paris
8. For seeing objects at the surface of water from a submarine under water, the instrument used is
- (A) kaleidoscope (B) Periscope
- (C) spectroscope (D) Telescope
9. G-15 is an economic grouping of
- (A) First World Nations
- (B) Second World Nations
- (C) Third World Nations
- (D) Fourth World Nations
10. Fathometer is used to measure
- (A) Earthquakes (B) Rainfall
- (C) Ocean depth (D) Sound intensity
11. For galvanizing iron which of the following metals is used?
- (A) Aluminium (B) Copper
- (C) Lead (D) Zinc
12. For purifying drinking water alum is used
- (A) for coagulation of mud particles
- (B) to kill bacteria
- (C) to remove salts
- (D) to remove gases

13. Firdausi was

- (A) a poet
- (B) well known for his epic 'Shahnama'
- (C) Both option A and B
- (D) None of the above

14. Gabriel Daniel Fahrenheit was

- (A) a German Physicist
- (B) developed the mercury thermometer in 1714
- (C) devised temperature scale
- (D) All of the above

15. During the first crusade, crusaders reached Jerusalem and captured it in

- (A) 1000 AD
- (B) 1099 AD
- (C) 1200 AD
- (D) 1515 AD

DEPARTMENT OF COMPUTER SCIENCE

GENERAL KNOWLEDGE

ANSWER KEY

1	C	14	D
2	A	15	B
3	A		
4	A		
5	C		
6	B		
7	A		
8	B		
9	C		
10	C		
11	D		
12	A		
13	C		

PHYSICS

1. Inertia is the property of:

(A) Volume	(B) Strength
(C) Mass	(D) Force
2. Which is a correct statement?

(A) Isothermal curve is steeper than adiabatic
(B) Adiabatic curve is steeper than isothermal curve
(C) Both are equally steep.
(D) Both run parallel to each other.
3. A Domestic Electricity metres measure in unit of:

(A) volt	(B) kilowatt
(C) k.watt hour	(D) ampere
4. A Voltmeter is used for:

(A) studying electrolysis
(B) measuring resistance
(C) measuring potential difference and current
(D) measuring potential difference
5. Capacity or ability to perform work is called:

(A) Power	(B) Energy
(C) Force	(D) Horse power
6. When a body is moving with constant velocity, it has:

(A) negative acceleration	(B) positive acceleration
(C) deceleration	(D) no acceleration
7. Difference in potential is measured in:

(A) N/C	(B) Volts
(C) Coulombs	(D) Ampere.
8. The angular displacement is measured in:

(A) Degrees	(B) Radians
(C) Revolutions	(D) All of these
9. One rise and one fall of loudness of sound make:

(A) one beat	(B) one resonance
(C) one harmonic	(D) one overtones

10. Power is defined as:

- (A) Rate at which an agency does work (B) Total work done by an agency
(C) Both A & B are true (D) Both A & B are wrong

11. A pendulum on the earth has a time-period of 1 second. Its time period in a box orbiting around the earth at a distance R from the surface of the earth will be? (R = radius of the earth)

- (A) 5 s (B) 1 s
(C) zero (D) infinity

12. Which one of the following properties is not found in both sound and light.

- (A) interference (B) diffraction
(C) polarization (D) reflection

13. A stone is dropped from high rock and at the time, another stone of same mass is thrown horizontally with a velocity of 200 m/s^2 . Which one will reach the ground first? (neglect the air friction).

- (A) first stone (B) second stone
(C) both will reach at same time (D) cannot be determined from the given data

14. Heat is flowing from higher to lower temperature through actual mass motion of the molecules is due to:

- (A) Radiation (B) Convection
(C) Conduction (D) None of these

15. For constructive Interference, the path difference between the two Interfering waves coming from his coherent source should be:

- (A) odd multiple of $\lambda/4$ (B) even multiple $\lambda/2$
(C) odd multiple of $\lambda/2$ (D) even multiple of $\lambda/4$

DEPARTMENT OF COMPUTER SCIENCE**PHYSICS****ANSWER KEY**

1	C	14	B
2	B	15	B
3	C		
4	D		
5	B		
6	D		
7	B		
8	D		
9	A		
10	A		
11	D		
12	C		
13	C		

ENGLISH

1. Hydrogen gas can be used _____ a fuel.
(A) for (B) as (C) of (D) like
2. All of us must abide _____ the laws of our country.
(A) on (B) by (C) for (D) at
3. She will compete _____ the prize, since it represents her fondest dream.
(A) for (B) to (C) of (D) at
4. Police said they found thirty bodies _____ the wreckage.
(A) in (B) between (C) among (D) under
5. People _____ quality do not gossip all the time.
(A) with (B) for (C) at (D) of
6. "Sir, you had better let me take horse to blacksmith to have a shoe put on," said the servant to the master.
(A) The servant suggested the master politely to let me take the horse to have a shoe put on.
(B) The servant suggested the master politely to let him take the horse to have a shoe put on.
(C) The servant suggested the master politely to let him took the horse to have a shoe put on.
(D) The servant suggested politely the master to let him take the horse to have a shoe puts on.
7. The teacher said to the student angrily, "Why have you disturbed the class. Leave the room and do not return today."
(A) The teacher asked the student angrily why he has disturbed the class, and ordered him to leave the room and not to return that day.
(B) The teacher asked the student angrily why he had disturbed the class, and orders him to leave the room and not to return that day.
(C) The teacher asked the student angrily why he had disturbed the class, and ordered him to leave the room and not to return today day.
(D) The teacher asked the student angrily why he had disturbed the class, and ordered him to leave the room and not to return that day.

8. She said to the king, "Has your Majesty any doubt of this man's guilt? There is the very sword with which he meant to kill you."

- (A) She asked the king with great regards whether his Majesty had any doubt of that man's guilt and said that there was the sword with which he meant to kill him.
- (B) She asked the king with great regards that whether his Majesty had any doubt of that man's guilt and said that there was the sword with which he meant to kill him.
- (C) She asked the king with great regards whether my Majesty had any doubt of that man's guilt and said that there was the sword with which he meant to kill him.
- (D) She asked the king with great regards whether his Majesty had any doubt of that man's guilt and said that there is the sword with which he meant to kill him.

9. "Sir, I want the work. May I earn a penny?" said the Lad(D)

- (A) The Lad told humbly that he wanted work and took permission whether he might earn a penny.
- (B) The Lad says humbly that he wanted work and took permission whether he might earn a penny.
- (C) The Lad told humbly that he wanted worked and took permission whether he might earn a penny.
- (D) The Lad told humbly that he wanted work and took permission whether he might earned a penny.

10. "What do you want to know?" the Owl said, "The wild goose is an inhabitant of many parts of globe."

- (A) The Owl asked what did he want to know and told that wild goose was an inhabitant of many parts of globe
- (B) The Owl asked what he wanted to know and told that wild goose was an inhabitant of many parts of globe
- (C) The Owl asked what he wanted to know and tells that wild goose was an inhabitant of many parts of globe
- (D) The Owl asked what he wanted to know and told that wild goose has been an inhabitant of many parts of globe

PASSAGE: Answer Questions 11 - 12 based on the following passage

The scientific name of the koala is *Phascolarctos cinereus*, from the Greek for "pouched bear" and "ash gray." The koala lives in trees, specifically some 35 of the more than 600 species of the genus *Eucalyptus* that grow in Australia(A) The diet of the adult koala is almost exclusively eucalyptus leaves and since the oils of eucalyptus leaves are toxic to most other mammals, one of my own works with koalas, and I shall be returning to it.

11. According to the passage, how many species of *Eucalyptus* does the mature koala feed on?

- (A) Less than 25
- (B) Approximately 40
- (C) Approximately 600
- (D) Exactly 635

12. According to the passage, which of the following statements is true about the adult koala's food?

- (A) It is very difficult to obtain.
- (B) It consists of both leaves and bark.
- (C) It is almost completely restricted to eucalyptus leaves.
- (D) It varies according to the season.

13. (A) How beautiful is the night!
 (B) How beautiful is the night,
 (C) How beautiful is the night:
 (D) How beautiful is the night.
14. (A) Alas, he is dead!
 (B) Alas: he is dead!
 (C) Alas; he is dead!
 (D) Alas, he is dead!
15. (A) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever.'"
 (B) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever.'"
 (C) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever.'"
 (D) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever.'"

DEPARTMENT OF COMPUTER SCIENCE**ENGLISH****ANSWER KEY**

1	B	14	D
2	B	15	A
3	A		
4	D		
5	D		
6	B		
7	D		
8	A		
9	A		
10	B		
11	C		
12	C		
13	A		

DEPTT. OF COMPUTER SCIENCE
University of Karachi

B.S. COMPUTER SCIENCE PROGRAM

ADMISSION TEST III

MATHEMATICS

1. Let $U = \{1, 2, 3, 4, 5\}$, $A = \{1, 2, 3\}$, $B = \{2, 3, 4\}$ then $((A \cap B) \cup A)^c =$ _____
 (A) A (B) U
 (C) $\{4, 5\}$ (D) B
 (E) A^c
2. If $(x - 2y)^2 = (x + y)^2$ with $i = \sqrt{-1}$, then _____
 (A) $x = 4, y = 4$ (B) $x + y + 4xy = 0$
 (C) $x^2 + 4y^2 = 0$ (D) $x = 0, y = 3/8$
 (E) $x + y + 4xy = 0$
3. If u and v are the roots of the equation $ax^2 + bx + c = 0$, then the equation $a^2x^2 + a(b+c)x + bc = 0$ has the roots _____
 (A) $a + b$ and a/c (B) b/c and c/a
 (C) b/c^2 and c/a^2 (D) $\frac{b}{u}$ and $\frac{c}{u}$
 (E) b/c and c/a
4. If the area of a square is twice the length of its diagonal then the length of one side of the square is _____
 (A) $\sqrt{2} + 2$ (B) $2(\sqrt{2})$
 (C) $\frac{1}{\sqrt{2}} + 2$ (D) $\sqrt{2} + 2$
 (E) $2 + \frac{1}{\sqrt{2}}$
5. If $G = \begin{bmatrix} \sin & -\cos & 0 \\ \cos & \sin & 0 \\ 0 & 0 & 1 \end{bmatrix}$ then the inverse of G _____
 (A) does not exist (B) is G itself
 (C) is a unit matrix (D) A^T
 (E) $\begin{bmatrix} \sin & \cos & 0 \\ \cos & -\sin & 0 \\ 0 & 0 & 1 \end{bmatrix}$
6. If $f(x) = x^2$ and $g(x) = x^{1/2}$, find $pf(x)$.
 (A) x^2 (B) x^2
 (C) x (D) $\frac{1}{x}$
 (E) x^4
7. A machine performs a multiplication in 2 seconds and addition or subtraction in one second, the time required by the machine to solve a determinant of order 3×3 using usual expansion method will be _____
 (A) 18 seconds (B) 5 seconds
 (C) 23 seconds (D) 1 minute
 (E) None of these
8. The recurring decimal number $0.\overline{121212}$ = _____
 (A) 0.12 (B) 0.121
 (C) 0.49 (D) $\frac{4}{33}$
 (E) None of these
9. The 5th term of a Harmonic progression is 9 and the 9th term is 5. The 45th term of this harmonic progression will be _____
 (A) 1 (B) 0
 (C) 45 (D) 54
 (E) None

10. The number of teams of two boys and three girls can be selected out of six boys and five girls equals

- (A) 150 (B) 15
(C) 7200 (D) 10
(E) None of these

11. If n is a natural number greater than 1 then exactly one of the following is true:

- (A) $1 + 2 + 3 + \dots + n = n^2(n+1)$
(B) $1 + 3 + 5 + \dots + (2n-1) = n^2 + 4$
(C) $a + (a+d) + (a+2d) + \dots + (a+(n-1)d) = \frac{n}{2} \{a + (n-1)d\}$
(D) $1^2 + 3^2 + 5^2 + \dots + (2n-1)^2 = \frac{1}{3} n(4n^2 - 1)$
(E) $n^2 - n + 41$ is a prime number

12. If $\sin \theta = \frac{1}{2}$ and $\operatorname{cosec} \theta = 2$ then the radian function θ lies in

- (A) The first quadrant only
(B) Either the first or the third quadrant
(C) The second quadrant only
(D) either the first or the fourth quadrant
(E) Either the first or the second quadrant

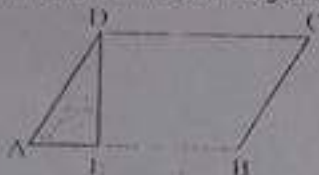
13. Two straight lines L_1 and L_2 are perpendicular to each other. If L_1 makes an angle α with the +ve x-axis and L_2 makes an angle β with the +ve x-axis then $\tan(\alpha - \beta) =$ _____

- (A) $\frac{1}{\sqrt{3}}$ (B) $\sqrt{3}$
(C) 1 (D) infinity
(E) None of these

14. If $\sin(a+b) = k(\sin a + \cos a)$ where k is a negative constant then b must be equal to _____

- (A) Zero (B) 90°
(C) 180° (D) 45°
(E) 225°

15. ABCD is a parallelogram and the area of the shaded region is 1 square meter. DE is perpendicular to AB. If AE is one fourth of AB then the area of the parallelogram ABCD shall be



- (A) 2 square meters (B) can not be determined
(C) 54 square centimeters (D) 8 square meters
(E) None of these

16. Let ABC be a triangle such that $|AH| = \frac{1}{2} |BC|$, then _____

- (A) the triangle is right angled triangle
(B) if $\angle ABC = 60^\circ$ then $|AC| = \sqrt{3}$
(C) if $\angle ACB = 90^\circ$ then $|AC| = \sqrt{3}$
(D) the triangle is an isosceles triangle
(E) None of these

17. $\sin 105^\circ =$ _____

- (A) $\frac{\sqrt{3}-1}{2\sqrt{2}}$ (B) $\frac{1-\sqrt{3}}{2\sqrt{2}}$
(C) $\frac{1+\sqrt{3}}{2\sqrt{2}}$ (D) $\frac{\sqrt{3}-1}{\sqrt{2}}$
(E) $\frac{\sqrt{3}+1}{2\sqrt{2}}$

18. The graph of $y^2 - 2xy + 2 = x^2$ _____
- (A) is symmetric about origin
 (B) intersects the y -axis at two points
 (C) is symmetric about x -axis
 (D) tangent to y -axis
 (E) None of these
19. If $x^2 - 2x + 2 \leq 0$, then x must lie in the interval _____
- (A) $2 \leq x \leq 4$
 (B) $-2 \leq x \leq 4$
 (C) $2 < x < 4$
 (D) $-2 \leq x \leq 4$
 (E) None of these
20. If $\log_e (0.0032) = 5$ then x must be _____
- (A) 10
 (B) e
 (C) 2
 (D) 0.2
 (E) None of these
21. If $f(x) = \frac{1 - x\sqrt{1+x}}{x\sqrt{1+x}}$, x is negative and $|x|$ is very small then _____
- (A) $f(x)$ is very small
 (B) $f(x)$ is large and positive
 (C) $f(x)$ is not defined
 (D) f is not defined
 (E) None of these
22. If a curve is represented by equations $x = 1 + 2at$, $y = t^2 + 1$, then the curve is _____
- (A) a parabola
 (B) hyperbola
 (C) an ellipse
 (D) a circle
 (E) None of these
23. If $y = \tan^{-1} \frac{1+x}{1-x}$ then $\frac{dy}{dx} =$ _____
- (A) $\frac{x}{1+x^2}$
 (B) $\frac{2x}{1+x^2}$
 (C) $\frac{x}{1-x^2}$
 (D) $\frac{1}{1+x^2}$
 (E) None of these
24. $\int \frac{2x \tan^{-1} x}{1+x^2} dx =$ _____
- (A) $\frac{\tan^{-1} x^2}{2}$
 (B) $\frac{\tan^{-1} x^2}{2}$
 (C) $\frac{(\tan^{-1} x^2)^2}{2}$
 (D) $\frac{(\tan^{-1} x)^2}{2}$
 (E) $(\tan^{-1} x^2)^2$
25. $\int_1^2 \sin^2 x \, dx = ?$
- (A) $2 \int_1^2 \sin^2 x \, dx$
 (B) $\int_1^{101} \sin^{101} x \, dx$
 (C) Zero
 (D) $\frac{\sin^{52} x}{52}$
 (E) $\sin^{52} x \cos x$

DEPARTMENT OF COMPUTER SCIENCE

UNIVERSITY OF KARACHI

B.S. (Computer Science)

ADMISSION TEST – III

MATHEMATICS

(ANSWER KEY)

1	(C)
2	(B)
3	(D)
4	(B)
5	(D)
6	(C)
7	(C)
8	(D)
9	(A)
10	(A)
11	(E)
12	(E)
13	(D)
14	(E)
15	(D)
16	(D)
17	(C)
18	(A)
19	(D)
20	(D)
21	(D)
22	(A)
23	(D)
24	(C)
25	(C)

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COMPUTER

26. Computer is a machine that accepts raw facts and figures and processes it into _____.

- a. Data
- b. Information
- c. Facts & Figures
- d. None of the Above

27. The other name for Abacus is

- a. Nanitel
- b. IBM
- c. Soroban
- d. Machintosh

28. The father of modern digital computer is

- a. Blaise Pascal
- b. Charles Babbage
- c. Clifford Berry
- d. None of the Above

29. Charles Babbage is famous for his invention of _____ & _____.

- a. Heat Engine & Difference Engine
- b. Heat Engine & Decision Engine
- c. Difference Engine & Analytical Engine
- d. None of the Above

30. _____ was the first fully automatic machine.

- a. Mainframe
- b. Mark I
- c. MiniFrame
- d. ENDIAC

31. Intel's first processor was named what?

- a. 4001
- b. 4002
- c. 4003
- d. 4004

32. A system that represents changing values as continuously variable physical quantities is called

- a. Minicomputer
- b. Open System
- c. Analog
- d. All of the above

33. Describes any system based on discontinuous data or events.
- Digital
 - Hybrid
 - Mainframe
 - All of the above
34. _____ also called embedded computers, are the tiny, specialized microprocessors installed in "smart" appliances and automobiles.
- Microprocessors
 - Microcontrollers
 - Personal Digital Assistants
 - None of the above
35. _____ are small computers that can fit on or beside a desk or are portable.
- Mainframes
 - Super Computers
 - Microcomputers
 - None of the above
36. Mainframe computers are the most powerful computer systems currently in use.
- True
 - False
37. Notebook computers offer the power of a desktop PC, as well as portability.
- True
 - False
38. Many types of personal digital assistants can be connected to a larger computer, enabling the two systems to share data.
- True
 - False
39. A laptop computer is the same thing as a
- Notebook computer
 - Handheld computer
 - Workstation
 - Network computer
40. Which of the following is the largest type of computer system?
- Workstation computer
 - Mainframe computer
 - Midrange computer
 - Network computer

41. Which of the following is not a general programming language type?

- a. machine languages
- b. low end languages
- c. assembly languages
- d. high-level languages

42. A computer can directly understand only its own _____.

- a. machine language
- b. assembly language
- c. high-level language
- d. none of the above

43. Assemblers _____.

- a. Convert machine language into high-level language.
- b. Convert assembly language into machine language.
- c. Convert high-level language into machine language.
- d. Convert high-level language into assembler language.

44. Programs that directly execute high-level language programs without compiling are called _____.

- a. assemblers
- b. interpreters
- c. compilers
- d. translators

45. RAD stands for

- a. Rapid Application Development
- b. Rapid Application Design
- c. Real Application Design
- d. None of the above

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COMPUTER

(ANSWER KEY)

26	(B)
27	(C)
28	(B)
29	(C)
30	(B)
31	(B)
32	(C)
33	(A)
34	(B)
35	(C)
36	(B)
37	(B)
38	(A)
39	(A)
40	(B)
41	(B)
42	(A)
43	(B)
44	(C)
45	(A)

GENERAL KNOWLEDGE

- Q.45. The height of world trade centre is 600' 1090'
- (A) 1,362 ft (B) 2,362 ft (C) 3,662 ft
(D) 4,415 ft (E) 2,482 ft
- Q.47. What is the height of Empire State building?
- (A) Chicago 1,368' (B) 5,000' (C) 1,250ft
(D) 1,45' (E) 1,250'
- Q.48. Madam Tsvet and was died in
- (A) 1940 (B) 1950 (C) 1890
(D) 1850 (E) 1955
- Q.49. Which scientist was dead?
- (A) Putterford (B) Antoine Lavoiser (C) Louis Pasteur
(D) Thomas Edison (E) Madam Curie
- Q.50. A day has how many hours?
- (A) 6 (B) 70 (C) 6:30
(D) 5 (E) 5:25
- Q.51. Amazon and Easynobel are two well know _____
- (A) ~~Books~~
(B) Websites dedicated to Amazing personalities and Nobel Prize Winner
(C) World wide Well known Tourism promoting companies
(D) Knowledge Management Software
- Q.52. When did U. S. A dropped atom bomb at Hiroshima?
- (A) 5th August 1945 (B) 24th October, 1945
(C) 9th August, 1945 (D) 6th August, 1945
(E) 21st October, 1945
- Q.53. How many Manzils are there in the Holy Quran?
- (A) 6666 (B) 7 (C) 12
(D) 120 (E) 30
- Q.54. Which printer uses the nozzles and ink spraying while printing a page.
- (A) Impact (B) Laser (C) Thermal
(D) Non - Impact (E) Ink - jet
- Q.55. Which of the following is the highest capacity storage device?
- (A) Disk (B) CD - ROM (C) Hard Disk
(D) Flash Ram (E) Magnetic Tapes
- Q.56. According to the Government's latest report the population of Pakistan is _____
- (A) 147.6 million (B) 137.5 million (C) 128.6 million
(D) 138.5 million (E) 147.8 million
- Q.57. There are _____ means of communication in Pakistan
- (A) 5 (B) 3 (C) 8
(D) 7 (E) 4
- Q.58. _____ independent candidates won National assembly seats in General Election 2002.
- (A) 29 (B) 27 (C) 20
(D) 10 (E) 15
- Q.59. Most of the people now a day, use _____ to pay the price of items purchased
- (A) smart card (B) ~~E card~~ Credit card (C) pay-card
(D) debit card
- Q.60. The permanent representative of Pakistan at UNO is
- (A) Mahina Lodhi (B) Zafar Ali Khan
(C) Shahid Ali Khan (D) Dr Ishrat Hussain
(E) None of these

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G.KNOWLEDGE

(ANSWER KEY)

Q.46.	A	Q.54	E
Q.47.	C	Q.55.	E
Q.48.	B	Q.56.	B
Q.49.	D	Q.57.	E
Q.50.	B	Q.58.	A
Q.51.	B	Q.59.	Both B & E
Q.52.	D	Q.60.	C
Q.53.	B	=====	

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PHYSICS

Q61. The average speed of a moving object during a given interval of time is always

- (A) its speed at any point
- (B) the distance covered during the time interval divided by the time interval
- (C) one-half its speed at the end of the interval
- (D) its acceleration multiplied by the time interval
- (E) one-half its acceleration multiplied by the time interval

Q62. At time $t=0$ a car has a velocity of 16 m/s . It slows down with an acceleration given by -0.50 m/s^2 for t in s . It stops at $t=$

- (A) $6.4s$
- (B) $32s$
- (C) $16s$
- (D) $8.0s$
- (E) $4.0s$

Q63. Displacement can be obtained from

- (A) slope of an acceleration - time graph
- (B) slope of a velocity - time graph
- (C) area under acceleration - time graph
- (D) area under a velocity - time graph
- (E) slope of an acceleration - time graph

Q64. The amount of work required to stop a moving object is equal to the

- (A) velocity of the object
- (B) kinetic energy of the object
- (C) mass of the object times its acceleration
- (D) mass of the object times its velocity
- (E) square of the velocity of the object

Q65. A ball is thrown into the air. As it rises, there is an increase in its

- (A) acceleration
- (B) velocity
- (C) kinetic energy
- (D) potential energy
- (E) momentum

Q66. The Newton-second is a unit of

- (A) work
- (B) angular momentum
- (C) power
- (D) linear momentum
- (E) none of these

Q67. An object attached to one end of a spring makes 20 vibrations in 10 seconds. Its period is

- (A) 211%
- (B) $10s$
- (C) $0.05Hz$
- (D) $2s$
- (E) $0.50s$

Q68. A loaded ship passes from a lake (fresh) to the ocean (salt water). Salt water is more dense than fresh water and as result the ship will

- (A) Ride higher in the water
- (B) Settle lower in the water
- (C) Ride at the same level in the water
- (D) Experience an increase in buoyant force
- (E) Experience a decrease in buoyant force

Q69. The ratio of specific heat of gas at constant volume to its specific heat at constant pressure is

- (A) 1
- (B) less than 1
- (C) more than 1
- (D) has units of pressure / volume
- (E) has units of pressure

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Q70. "Beats" in sound refer to:

- (A) interference of two waves of the same frequency
- (B) combination of two waves of slightly different frequency
- (C) reversal of phase of slightly different sound velocities
- (D) two media having slightly different sound velocities
- (E) effect of relative motion of source and observer

Q71. The heat capacity of object B is twice the heat capacity of the object A. Initially A is at 300 K and B is at 450 K. They are placed in thermal contact and the combination is isolated. The final temperature is of both objects is :

- | | | |
|----------|----------|----------|
| (A) 270K | (B) 300K | (C) 400K |
| (D) 450K | (E) 250K | |

Q72. A charged capacitor stores 10C at 40V. Its stored energy is :

- | | | |
|----------|----------|----------|
| (A) 400J | (B) 4J | (C) 0.2J |
| (D) 2.5J | (E) 200J | |

Q73. A certain wire has resistance R. Another wire, of the same material, has half the length and half the diameter of the first wire. The resistance of the second wire is :

- | | | |
|-----------|-----------|-------|
| (A) $R/4$ | (B) $R/2$ | (C) R |
| (D) 2R | (E) 4R | |

Q74. A ordinary magnifying glass produces an image which is :

- | | | |
|-----------------------|-----------------------|--------------------------|
| (A) real and erect | (B) real and inverted | (C) virtual and inverted |
| (D) virtual and erect | (E) none of the above | |

Q75. If the refractive index of water is 1.50 and the refractive index of glass 1.33, the total internal reflection at an interface between this glass and water.

- (A) occurs whenever the light goes from glass to water
- (B) occurs whenever the light goes from water to glass
- (C) may occur when the light goes from water to glass
- (D) may occur when the light goes from glass to water
- (E) can never at this interface

DEPARTMENT OF COMPUTER SCIENCE

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ADMISSION TEST - III

PHYSICS

(ANSWER KEY)

61.	B
62.	B
63.	D
64.	B
65.	D
66.	D
67.	E
68.	A
69.	B
70.	B
71.	C
72.	E
73.	D
74.	D
75.	B

ENGLISH

Choose the correct answer (A – E) which is closest in meaning to the underlined words in each of the following questions.

- Q 76. My brother is very liable to be affected by to colds.
 (A) subject (B) susceptible (C) surreptitious
 (D) suspicious (E) susceptible
- Q 77. The criminal was kept under a twenty – four hour constant supervision or watch by the plain cloth policemen.
 (A) subrogation (B) susceptibility (C) surveillance
 (D) surrealism (E) suspicion
- Q 78. He is at the highest point of his career.
 (A) lop (B) pinnacle (C) summit
 (D) zenith (E) best
- Q 79. The children listened to the sad cry or howl of the dog.
 (A) yowl (B) moan (C) groan
 (D) shout (E) shriek
- Q 80. Many of today's youth are very having a tendency to attach too much importance to bodily comfort, money, etc.
 (A) extravagant (B) materialistic (C) spendthrift
 (D) excessive (E) maternal
- Q 81. Mrs. Thomas went shopping for state becoming a mother cloths when she discovered that she was pregnant.
 (A) maternal (B) motherly (C) material
 (D) maternity (E) protective
- Q 82. He felt great feeling of sorrow for the troubles and sufferings of others for the old beggar.
 (A) mercy (B) empathy (C) pittance
 (D) pity (E) pity
- Q 83. He was a person who is slow at learning or stupid at school.
 (A) idiot (B) imbecile (C) moron
 (D) dunce (E) slow
- Q 84. There is a causing disgust smell coming from the kitchen.
 (A) foul (B) stench (C) filthy
 (D) odorous (E) fragrant
- Q 85. There was a share or amount of something that each person or group of people, among a number, people or groups of people, may produce or receive on the number of foreign students the university could admit.
 (A) portion (B) percentage (C) quota
 (D) proportion (E) share
- Q 86. He twisted violently to and fro in discomfort about when I tickled him, but he couldn't get away.
 (A) contorted (B) warped (C) twisted
 (D) swayed (E) withed
- Q 87. The people gave up or surrendered to the army of the emperor.
 (A) vanquished (B) yielded (C) submitted
 (D) subdued (E) abandoned
- Q 88. The homesick girl felt a great longing for her home.
 (A) wanted (B) craved (C) yearned
 (D) required (E) desired
- Q 89. He saw to the mental and physical well – being of the children.
 (A) welfare (B) give (C) prosperity
 (D) fortune (E) happiness
- Q 90. Paul had a likelihood towards to get angry easily.
 (A) trend (B) tendency (C) inclination
 (D) disposition (E) character

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ENGLISH

(ANSWER KEY)

Q.76.	(E)
Q.77.	(C)
Q.78.	(D)
Q.79.	(A)
Q.80.	(B)
Q.81.	(D)
Q.82.	(A)
Q.83.	(D)
Q.84.	(A)
Q.85.	(C)
Q.86.	(E)
Q.87.	(B)
Q.88.	(C)
Q.89.	(C)
Q.90.	(C)

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UNIVERSITY OF KARACHI

Departmental Test for Admission in B.S. (Computer Science)

Each question is followed by the five choices. Choose the best and write corresponding letter (A - E) on the **ANSWER SHEET**.

Q 01. The amount of radioactive material remaining after a period of time is related to the

- (A) atomic mass
- (B) pressure
- (C) half-life
- (D) volume
- (E) none of these

Q 02. A virtual image may be

- (A) larger than the object
- (B) smaller than the object
- (C) erect
- (D) all of the above
- (E) none of the above

Q 03. An object 2.00 cm tall is placed 31.0 cm from a converging lens. A real image is formed 8.00 cm from the lens. The focal length of the lens is

- (A) 4.0 cm
- (B) 5.0 cm
- (C) 6.5 cm
- (D) 8.0 cm
- (E) 6.0 cm

Q 04. The force necessary to produce an acceleration of 6.00 m/s^2 on a mass of 5.00 kg is

- (A) 30.0 N
- (B) 31.0 N
- (C) 32.0 N
- (D) 33.0 N
- (E) 35.0 N

Q 05. Accuracy is

- (A) The same as precision
- (B) The number of significant digits
- (C) The smallest unit with which a measurement is made
- (D) All of the above
- (E) None of the above

Q 06. A 60.0 g bullet is fired from a gun and has 3150 J of kinetic energy. Its velocity is

- (A) 325 m/s
- (B) 324 m/s
- (C) 300 m/s
- (D) 260 m/s
- (E) 400 m/s

Q 07. A force of 5.0 N is applied to a spring whose elastic constant is 0.250 N/cm. Its change in length is

- (A) 20 cm
- (B) 30 cm
- (C) 40 cm
- (D) 25 cm
- (E) 23 cm

Q 08. The amount of heat required to melt 1 kg of a solid is called its

- (A) heat of vaporization
- (B) mass density
- (C) weight density
- (D) heat of fusion
- (E) latent heat

Q 09. Two charges each with magnitude $5 \times 10^{-6} \text{ C}$ are separated by a distance of 0.200 cm. The force of repulsion between them is

- (A) $0.51 \times 10^8 \text{ N}$
- (B) $0.14 \times 10^8 \text{ N}$
- (C) $0.44 \times 10^8 \text{ N}$
- (D) $0.56 \times 10^8 \text{ N}$
- (E) $0.22 \times 10^8 \text{ N}$

Q 10. The resistance of a copper wire 20.0 m long with cross-sectional area of $6.56 \times 10^{-4} \text{ cm}^2$ at 20°C is (The resistivity of copper at 20°C is $1.72 \times 10^{-8} \Omega \cdot \text{m}$)

- (A) 1 ohm
- (B) 0.5 ohm
- (C) 0.524 ohm
- (D) 1.5 ohm
- (E) 0.42 ohm

Q 11. The current in a parallel circuit is given by

- (A) the sum of the inverse currents
- (B) the sum of the voltages
- (C) the sum of the currents in the branches
- (D) all of the above
- (E) none of the above

Q 12. A hand drill draws 4.0 Ampere and has a resistance of 14.6 ohm. The power it uses is

- (A) 150 watts (B) 200 watts (C) 233 watts
(D) 234 watts (E) 300 watts

Q 13. The maximum voltage in an alternating current is 75 V. The instantaneous voltage at $t = 35^\circ$ is

- (A) 45V (B) 34V (C) 43V
(D) 46V (E) 50V

Q 14. The capacitive reactance of a 10 μ F capacitor in a circuit of frequency 1.00 KHz is

- (A) 15.9 ohm (B) 21 ohm (C) 15.5 ohm
(D) 15.3 ohm (E) 16 ohm

Q 15. The FM band of a radio is centered around a frequency of 100 MHz. The wave length of radio transmission is

- (A) 2.5 m (B) 3.0 m (C) 4.0 m
(D) 3.5 m (E) 4.5 m

Q 16. If you are using MS Word and Netscape Navigator on your computer simultaneously this is called

- (A) Workgroup computing (B) Application integration (C) Processing bar-fling
(D) Multiprocessing (E) Multitasking

Q 17. Which of the following is not a valid email address? (NOTE: xyz is someone's name, ku is his/her institution's name, des is his/her department's name and pk is his/her country's code)

- (A) xyz@ku.edu (B) xyz@ku.edu.pk (C) xyz@des.ku.edu
(D) xyz@des.ku.edu.pk (E) xyz@des.ku

Q 18. When an operating system uses secondary storage to store programs in RAM during execution of those programs, it is called

- (A) secondary memory (B) external memory (C) virtual memory
(D) extended memory (E) expanded memory

Q 19. An 8 bit computer word is to hold both negative and positive numbers with most significant bit representing a sign bit. The largest positive number that can be stored is

- (A) 1023 (B) 511 (C) 255
(D) 127 (E) none of these

Q 20. Binary used to represent data inside a computer, these bits are stored in RAM as

- (A) zeros and ones (B) true and false values (C) logical values
(D) low and high frequency signals (E) high and low voltage levels

Q 21. A rule violation in a program is called _____ error

- (A) semantic (B) language (C) programming
(D) processing (E) syntax

Q 22. Amongst the following _____ is used for converting printed documents into machine-readable form

- (A) OMR (B) MICR (C) OCR
(D) Barcode reader (E) PTF reader

Q 23. Which of the following may not be a medium technology for a wireless LAN?

- (A) radio waves (B) infrared (C) satellite
(D) DSL (E) A and D are correct

Q.24. Which of the following is not a storage device?

- (A) RAM
(D) PCB

- (B) Cache
(H) RAM card

- (C) Flash card

Q.25. Two binary numbers are to be subtracted. If A represents first number and B represents two's complement of the number which is to be subtracted then to subtract these numbers:

- (A) A and B are to be added
(B) A and B are to be subtracted
(C) two's complement of A is to be subtracted from B
(D) two's complement of A is to be added into B
(E) subtraction is not possible without converting B in its original form

Q.26. Which of the following are character encoding schemes?

- 1) ASCII 2) ANSI 3) EBCDIC 4) Unicode 5) BCD

- (A) 1 and 3 only (B) All except 4 and 5 (C) All except 5
(D) All (E) All except 2 and 5

Q.27. Which of the following is not a markup language?

- (A) HTML
(D) SGML

- (B) XML
(E) UML

- (C) VRML

Q.28.

All server computers on the Internet have an associated domain name if a server does not have an associated domain name then _____

- (A) can't be accessed by Internet users
(B) can be accessed using their TCP/IP addresses
(C) can only be accessed by directly dialing the modem of that server
(D) can be accessed only through a satellite
(E) can only be accessed by hackers

Q.29.

A three bit binary number is to be stored in excess-4 format. In this format numbers can be stored ranging from -4 to +3. To convert a number into excess-4 format, 4 is added to the number and result is converted into binary. So the bit pattern to store zero is _____

- (A) 000₂ (B) 001₂ (C) 100₂ (D) other than A, B and C
(E) Can't be converted because the number is neither positive nor negative

Q.30.

The number 119010_2 is given in excess 2^4 form. What is the actual number?

- (A) 82 (B) 50 (C) 32
(D) 18 (E) none of these

Q.31.

WAP is acronym for _____

- (A) Web Application Protocol (B) Web Access Point
(C) Wireless Access Point
(D) Wireless Application Protocol (E) None of these

Q.32.

The product of 01101110_2 and 0000111_2 is _____

- (A) 0000 1001 0001 0010₂ (B) 0000 0010 1101 1010₂ (C) 0000 0101 0001 0110₂
(D) 0000 0111 0000 0110₂ (E) 0110 1110 0000 0111₂

Q.33.

A software package needs a total of 6MB RAM. Base Memory of existing Hardware is 512 Kb with no external RAM chips. Adding RAM chips will extend the memory to accommodate the software. If each RAM chip has a capacity of 128 Kb, find the number of chips to be used to extend memory?

- (A) Less than 21
(D) 24

- (B) 21
(E) none of these

- (C) 22

Q.34 The number $28_{10} = 16_{16}$ _____

- (A) 38_{10} (B) 50_{10} (C) 44_{10}
(D) Number with different bases can't be added (E) can't be added since numbers are not

Q.35 The truth table of Boolean expression $(\bar{E} + C) \cdot D \oplus (A \cdot E)$ will contain _____ rows

- (A) 5 (B) 8 (C) 16
(D) 32 (E) none of these

Q.36 The graph of $x - 5y^2 + 6 = 0$ _____

- (A) Symmetric about x-axis (B) Symmetric about the y-axis (C) symmetric about the origin
(D) not symmetric (E) Symmetric about both axes simultaneously

Q.37 Let a set be given as $A = \{1, 2, 3\}$. Some other sets are also given as follows: $B = \{0, 1, 2, 3\}$; $C = \{1, 2, 3, 4\}$; $D = \{x | x - 3y + 2z = 0\}$; $E = \{3, 1, 2\}$; $F = \{3, 2, 1\}$. Then the following sets are equal to A _____

- (A) E, F (B) only D (C) both B and D
(D) Both D and C (E) Both B and F

Q.38 Let $3 \leq 4 - 2x \leq 7$, then _____

- (A) x lies in the interval $-\frac{3}{2} \leq x \leq \frac{3}{2}$ (B) x lies in the interval $\frac{3}{2} \leq x \leq \frac{3}{2}$
(C) x lies in the interval $\frac{3}{2} \leq x \leq \frac{3}{2}$ (D) x lies in the interval $\frac{3}{2} \leq x \leq \frac{3}{2}$
(E) x lies in the interval $\frac{3}{2} \leq x \leq \frac{3}{2}$

Q.39 Let $y = 2u - 3u$ where $u = 5x$. Then the expression of $\frac{dy}{dx}$ is equal to _____

- (A) 5 (B) -3 (C) -15
(D) 15 (E) -4

Q.40 Let $f(x) = \frac{x^2 - 4}{x - 2}$, then the limiting value of $f(x)$ as x tends to 2 is equal to _____

- (A) 2 (B) 4 (C) $\frac{0}{0}$
(D) 0 (E) ∞

Q.41 The volume of a sphere, whose radius is given by $r = \frac{1}{2}x^2$. Let the relative error in radius be known as $v = \frac{dr}{r}$. Then the relative error in volume, which is $\frac{dv}{v}$ is equal to _____

- (A) ± 0.016 (B) ± 0.001 (C) ± 0.0012
(D) ± 1.2 (E) ± 2.1

Q.42 A function is given by the form $y = x^3 - 3x + 1$. Then the values of x in which $\frac{dy}{dx}$ is equal to zero are _____

- (A) ± 1 (B) ± 2 (C) $\pm 2i$
(D) $\pm \sqrt{2}$ (E) $\pm \sqrt{0.5}$

Q.43 Suppose $y = \frac{1}{3}x^3 - 2$. Then the slope of the tangent line to the curve at $x = 1$ is equal to _____

- (A) 1/3 (B) -2 (C) zero
(D) -2 (E) -1/3

Q.36. An ideal gas is allowed to expand freely against a vacuum in a rigid insulated container. After this expansion, the gas has undergone a/an

- (A) change in phase (B) increase in pressure (C) change in temperature
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- (A) Deoxyribo Nucleic Acid (B) Di-Hydro Amino (C) Dioxy Neural Activation
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(C) It comes out in night-time only (D) It back can not be turned inwards
(E) It has usually large nasal opening

Q.51. If a coin is tossed twice and at the end of the second toss of the coin, a die is tossed, then the total number of outcomes in the sample space are

- (A) 12 (B) 24 (C) 8
(D) 36 (E) 72

Q.52. If A and B are two sets in a sample space S, then $(A \cup B)'$ is equal to:

- (A) $A' \cup B'$ (B) $A \cap B$ (C) $A \cap B'$
(D) $A' \cap B'$ (E) $A' \cap B$

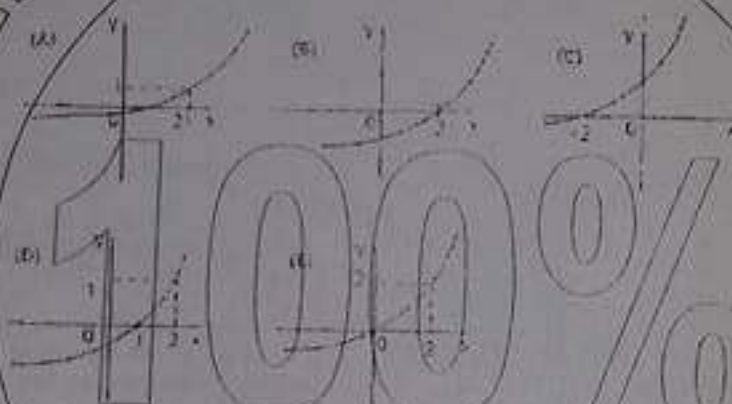
Q.53. Two points on a straight line are given: (24, 60000), (32, 44400). Then the equation of the line is

- (A) $y = 444x + 60000$ (B) $y = 803x + 4441$ (C) $y = 3x + 2$
(D) $y = 1950x + 13200$ (E) $y = 1950x + 106800$

Q.54. Let $f(x_1, x_2, x_3) = x_1^2 + 2x_1^2x_2 + 3x_2x_3 - 10$ then $f(0, 2, -3)$ is equal to

- (A) 8 (B) -28 (C) 18
(D) 28 (E) 118

Q.55. If $y = e^{x-2}$, then the sketch of this function is:



Q.56. The solution of the system of equations

$$\begin{aligned} 3x - 2y &= 6 \\ -15x + 10y &= -30 \end{aligned}$$

is given by

- (A) infinitely many solutions (B) $x = 1/3, y = 1/2$ (C) $x = -1/15, y = 1/10$
(D) $x = -1/15, y = 1/10$ (E) $x = 0, y = 0$

Q.57. The solution of the equation $\log x^2 + \log x = 9$ given by

- (A) $x = e$ (B) $x = e^9$ (C) $x = 8$
(D) $x = e^2$ (E) $x = e^8$

Q.58. The value of $\int_2^4 (4x - 5) dx + \int_1^4 (5 - 6x) dx$ is equal to

- (A) +24 (B) -12 (C) 15
(D) -10 (E) 10

Q.59. The function given by $y = x^2 - 3x + 2$ is a

- (A) straight line (B) hyperbola (C) parabola
(D) ellipse (E) circle

Q.60. The maximum value of y in the equation $y = 2x^2 + 4$ is attained at

- (A) $x = 2\sqrt{2}$ (B) $x = \sqrt{2}$ (C) $x = -\sqrt{2}$
(D) $x = -4$ (E) $x = 0$

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Q.61 Country code for dialing an international call to Pakistan is:

- (A) 21 (B) 42 (C) 91
(D) 92 (E) 96

Q.62 Pakistan's standard time is equivalent to:

- (A) GMT+5 (B) GMT-5 (C) GMT+4
(D) GMT-4 (E) GMT+3

Q.63 Which of the following countries is not included in SAARC?

- (A) India (B) Bangladesh (C) China
(D) Sri Lanka (E) Nepal

Q.64 Seoul is located in:

- (A) North Korea (B) South Korea (C) Malaysia
(D) Indonesia (E) Japan

Q.65 Which of the following country's currency is not called Dollar?

- (A) Australia (B) Hong Kong (C) Singapore
(D) United States of America (E) Holland

Q.66 Which of the following is not in England?

- (A) London (B) Surrey (C) Scotland
(D) Liverpool (E) Exeter

Q.67 Who was the first Pakistan Prime Minister to visit USA officially?

- (A) Liaquat Ali Khan (B) Zulfikar Ali Bhutto (C) Muhammad Khan Junejo
(D) Benazir Bhutto (E) Nawaz Sharif

Q.68 William Shakespeare died in the year:

- (A) 1515 (B) 1616 (C) 1717
(D) 1818 (E) 1919

Q.69 The famous English play "The Mousetrap" was written by:

- (A) Jules Verne (B) Charles Dickenson (C) Mark Twain
(D) Agatha Christie (E) Enid Blyton

Q.70 President of which country has been awarded the Nobel Peace Prize recently?

- (A) Japan (B) Iran (C) Singapore
(D) France (E) South Korea

Q.71 Which Pakistani cricketer got first married in the current year?

- (A) Saeed Anwar (B) Waqar Yonus (C) Shahid Afridi
(D) Saqlain Mushtaq (E) Yousuf Youhana

Q.72 How many players participate in the match of basket ball from each side at a time?

- (A) 5 (B) 6 (C) 2
(D) 10 (E) 11

Q.73 The disease is:

- (A) Typhoid (B) Influenza (C) Chicken pox
(D) German measles (E) Malaria

Q 74 The largest clock of the world "Big Ben" is situated in which city of the world

- (A) Paris (B) Rome (C) London
(D) Moscow (E) New York

Q 75 Olympics 2000 were held in which country of the world

- (A) England (B) USA (C) Canada
(D) Japan (E) Australia

Fill the blanks with most appropriate words.

Q 76 If human beings will not provide them _____ they will find it for themselves

- (A) their food (B) their clothes (C) with their food
(D) their prey (E) none of these

Q 77 Richards was called _____ take someone else's place at the last minute

- (A) on to (B) upon to (C) into
(D) back to (E) to

Q 78 _____ there were only undeveloped stretches of coastline, hotels have
creating employment for local population

- (A) where - built (B) where once - built (C) where once - sprung up
(D) where - have built (E) where - have been sold

Q 79 _____ cautiously the men _____ from end to end, finding no one and detecting no signs of
trouble

- (A) searched in (B) traveled along (C) moved in
(D) searched at (E) surveyed

Q 80 Although the critics agreed that the book was brilliant, so few copies were sold that the _____
brought the author _____

- (A) little financial loss (B) great moral reward (C) small theoretical gain
(D) little financial reward (E) great intellectual gain

Q 81 Opposite of the word scrappy is

- (A) sketching (B) lanky (C) disappointed
(D) perfect (E) fragmentary

Q 82 He replied _____
(A) far better than his (B) to the best of everyone (C) to the best of his
(D) in the best of his (E) with the best of his

Q 83 It's dull in our town _____ playmates left

- (A) because (B) since my (C) till my
(D) as soon as my (E) due to my

Q 84 This circumstance _____ the matters very serious

- (A) certainly makes (B) certainly have made (C) certainly make
(D) certainly has turned (E) have made

Q 85 Everything happened exactly _____ expected

- (A) as was (B) like was (C) as had been
(D) as have been

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Q.86. In case _____ I shall email you.

- (A) he was seriously sick
(D) he is seriously sick

- (B) he could be sick
(E) he shall be sick

(C) he fall sick

Q.87. He _____ the Taj Mahal when he went to Agra.

- (A) may see
(D) must visit

- (B) must see
(E) must have seen

(C) might see

Choose answers that are closest to the given word.

Q.88. Desperate

- (A) wealthy
(D) bankrupt

- (B) desperate
(E) destined

(C) destruction

Q.89. Ornate

- (A) decorated
(D) attractive

- (B) visible
(E) explicit

(C) evident

Q.90. Liquid

- (A) remove
(D) liquid

- (B) clear
(E) bold

(C) explain

ANEES HUSSAIN

EXCELLENCE IN EDUCATION SINCE 1989



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E-Mail: anees_hussain@gmail.com

DEPARTMENT OF COMPUTER SCIENCE
UNIVERSITY OF KARACHI

Departmental Test for Admission in BS(CS) Program

Each Question is followed by five choices. Choose the best choice and write corresponding letter (A - E) on the ANSWER SHEET

Q.1. The values of t for which the quadratic equation $tx^2 + 2x + t = 0$ has equal roots are

- (A) 1, 2
(D) 1, 0

- (B) 1, -1
(E) -1, 0

- (C) -1, 2

Q.2. The equation $x^2 + 6x - m = 0$ has two distinct real roots. The range of values of m are

- (A) $m \leq -9$
(D) $m \geq -9$

- (B) $m < -9$
(E) $m = 9$

- (C) $m > -9$

Q.3. A possible solution of the simultaneous equations:
 $2x + 3y = 5$
 $30x + 45y = 90$

is $x = a$ and $y = b$, where a & b are respectively

- (A) 1, 1
(D) 3, 0

- (B) 2, 5, 0
(E) None of these

- (C) 0, 2

Q.4. The determinant of $\begin{bmatrix} b & 1 \\ -1 & 2 \end{bmatrix}$ is -1. The inverse of the matrix is

- (A) $\begin{bmatrix} 2 & -1 \\ 1 & -1 \end{bmatrix}$
(D) $\begin{bmatrix} 2 & 1 \\ -1 & -1 \end{bmatrix}$

- (B) $\begin{bmatrix} -1 & 1 \\ -1 & 2 \end{bmatrix}$
(E) None of these

- (C) $\begin{bmatrix} -2 & 1 \\ -1 & 1 \end{bmatrix}$

Q.5. The value of $\sum_{r=1}^{20} \left(\frac{2}{3}\right)^r = \left(\frac{2}{3}\right) + \left(\frac{2}{3}\right)^2 + \dots + \left(\frac{2}{3}\right)^{20}$ is

- (A) $2 \left(1 - \left(\frac{2}{3}\right)^{10}\right)$

- (B) $2 \left(1 - \left(\frac{2}{3}\right)^{19}\right)$

- (C) $2 - \left(\frac{2^{21}}{3^{20}}\right)$

- (E) None of these

Q.6. The equation of the straight line passing through the point (0, 1) and perpendicular to the line $y = x$ is

- (A) $x - y = 1$
(D) $x + y = 0$

- (B) $x + y = 1$
(E) None of these

- (C) $-x + y = 1$

Q.7. Two points has coordinates A(5, -4) and B(5, 6). The equation of the perpendicular bisector of AB is

- (A) $x = 1$
(D) $y = -1$

- (B) $x = -1$
(E) None of these

- (C) $y = 1$

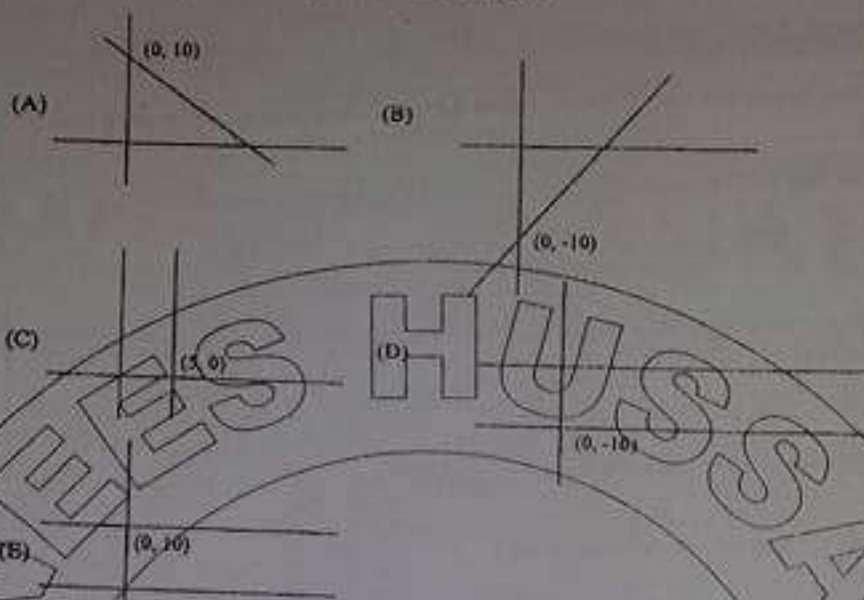
Q.8. A function g is defined by $g(x) = 3 - 1/x$, $x \neq 0$. If image of a is $2a$, then the possible values of a are

- (A) 1, 2
(D) 1, 1/2

- (B) 2, 4
(E) None of these

- (C) 1, 1/2

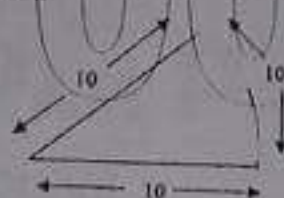
Q.9. The graph of the line $y = mx - 10$ (where $m > 0$ and finite) is



Q.10. Given that $\tan \theta = 3/4$ and $180^\circ < \theta < 270^\circ$, the value of $\sin \theta$ is

- (A) $3/5$ (B) $-3/5$ (C) $4/5$
(D) $-4/5$ (E) None of these

Q.11. A piece of wire 30cm long is bent to form the shape of a sector. If the arc has length 10cm, then the area enclosed by this sector is



- (A) 200 cm^2 (B) 150 cm^2 (C) 50 cm^2
(D) 180 cm^2 (E) None of these

Q.12. The third term of the binomial expression $\left(1 + \frac{1}{2}\right)^n$ is twice the fourth term. The value of n is

- (A) 3 (B) 4 (C) 5
(D) 6 (E) 7

Q.13. The tangent to the curve $y = \frac{a}{x} - bx$ at $(1, 2)$ is parallel to the line $y = x$. The values of the constants a and b are respectively

- (A) $1/2, 2/5$ (B) $1/2, -3/2$ (C) 1, 2
(D) 2, 1 (E) None of these

Q.14. It is given that the tangents to the curve $3y = x^2 + kx + 15$ at the points with x -coordinates 2 and -1 respectively are perpendicular to each other. The value of k is

- (A) 2 (B) -1 (C) 0
(D) 5 (E) None of these

Q.15. The curve $y = x^3 + x^2 + ax + b$ has a maximum point at $(-1, 1)$. The values of a and b are respectively

- (A) $-1, 1$ (B) $-1, 0$ (C) $1, 2$
(D) $1, 1$ (E) None of these

Q.16. Given that $y = e^{-2x}$, then $\frac{d^{15}y}{dx^{15}}$ is

- (A) y^{15} (B) $512y$ (C) $1024y$
(D) $-1024y$ (E) None of these

Q.17. The value of $\int_0^1 \frac{1}{(1+x)^2} dx$ is

- (A) $1/2$ (B) $7/4$ (C) $3/4$
(D) 0 (E) None of these

Q.18. The value of $\int_2^4 (\ln x) dx$ is

- (A) $2 \ln x$ (B) $\ln 4 - \ln 2$ (C) $6 \ln 2 - 2$
(D) $\ln 16 - \ln 4$ (E) None of these

Q.19. A possible value of $\int \sin x \cos x dx$ is

- (A) $\sin x \int \cos x dx$ (B) $\cos x \int \sin x dx$ (C) $\frac{1}{2} \sin^2 x$
(D) $\frac{1}{2} \cos^2 x$ (E) None of these

Q.20. Given that $x^2 - 3x + a$ has a remainder 1 when divided by $x - 1$. The value of a is

- (A) 1 (B) 2 (C) 3
(D) 4 (E) 5

Q.21. Suppose $\log_2 k = -2 + 2 \log_2 5 + \log_2 10$. Then the value of k is

- (A) $181/4$ (B) $141/4$ (C) $125/2$
(D) Impossible to find (E) None of these

Q.22. If $-2 \leq x \leq 7$ and $2 \leq y \leq 8$, then the greatest and least possible values of $x - y$ are respectively

- (A) $-1, -4$ (B) $15, 0$ (C) $7, -2$
(D) $8, 2$ (E) $5, -10$

Q.23. A cuboid has a square base of side x cm and its height is $(2x + 1)$ cm. The approximate increase in its volume when x increases from 3 cm to 3.01 cm is

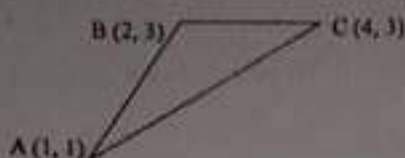
- (A) 0.611 cm^3 (B) 0.6 cm^3 (C) 0.6 cm
(D) 0.06 cm^3 (E) 0.6 cm^3

Q.24. Given that $A = \begin{bmatrix} 2 & 2 \\ -1 & -1 \end{bmatrix}$ and $A^2 = KA$, the value of K is

- (A) 3 (B) 2 (C) 1
(D) 4 (E) 5

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Q.25. The area of the triangle $\Delta(1, 1), \Delta(4, 3)$ and $\Delta(9, 3)$ is



(A) 8
(D) 2

(B) 6
(E) None of these

(C) 4

Q.26. The momentum of a bullet having a mass of 100 gm and a velocity of 100 m/s will be

(A) 1000 Kg-m/s
(D) 1 Kg-m/s

(B) 10 Kg-m/s
(E) 50 Kg-m/s

(C) 100 Kg-m/s

Q.27. The product of force and force arm is a measure of

(A) Momentum
(D) K.E.

(B) Torque
(E) P.E.

(C) Weight

Q.28. The energy of photo-electron does not depend on

(A) Nature of metal
(D) Intensity of light

(B) Frequency of light
(E) Wave length

(C) Work function

Q.29. Two resistance of 1 and 1 ohm are connected in parallel will have a net resistance of the value

(A) 1.5 ohm
(D) 1.0 ohm

(B) 2 ohm
(E) 3 ohm

(C) 0.5 ohm

Q.30. If two identical sources of light passing through two separate pin holes meet a point in space. The phenomenon is known as

(A) Polarization
(D) Interference

(B) Scattering
(E) Refraction

(C) Diffraction

Q.31. Basically electron in the atom of metal is the

(A) Charge particle
(D) Energy particle

(B) Material particle
(E) Negative particle

(C) Ionic particle

Q.32. Balmer series of hydrogen atom spectrum lies in the range

(A) $1000-2000\text{ \AA}$
(D) $7000-11000\text{ \AA}$

(B) $2000-4000\text{ \AA}$
(E) $11000-13000\text{ \AA}$

(C) $4000-7000\text{ \AA}$

Q.33. If " λ " is the wavelength of light, which is incident on a single slit of width " a " then diffraction will become most pronounced, when

(A) $\lambda/3 = a$
(D) $a = \lambda$

(B) $2\lambda = a$
(E) $\lambda/5 = a$

(C) $a/\lambda \rightarrow 0$

Q.34. A solenoid has an inductance of 0.32 Henry . Its reactance is measured in

(A) mH
(D) Ohm

(B) μH
(E) Volt

(C) Amp

Q.35. Normally the magnetic field, B is measured in

(A) Torr
(D) mTesla

(B) mbar
(E) mvolt

(C) Henry

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(E) It has usually large nasal opening

- Q.49. The material used to make Nishan-e-Haider is:
 (A) Metal retrieved from guns of famous war heroes
 (B) Gold
 (C) Metal retrieved from guns of enemies during war
 (D) Metal made of silver, gold and platinum
 (E) None of these
- Q.50. Calcium carbonate is commonly known as:
 (A) Common salt
 (B) Soda ash
 (C) Baking soda
 (D) Ajino moto
 (E) Chalk
- Q.51. Number of persons who refused to accept the Nobel prize is:
 (A) None
 (B) 1
 (C) 2
 (D) 3
 (E) 4
- Q.52. If your watch is telling you the Greenwich Mean Time on the day of Christmas, this means you are in which country:
 (A) France
 (B) Germany
 (C) Hungary
 (D) Sweden
 (E) Great Britain
- Q.53. Pick the odd one out:
 (A) Copper
 (B) Silicate
 (C) Iron
 (D) Silver
 (E) Aluminium
- Q.54. Hakeem Saeed was assassinated on:
 (A) 22nd February, 1999
 (B) 22nd February, 2000
 (C) 19th March, 2002
 (D) 14th September, 1999
 (E) None of these
- Q.55. Capital of Switzerland is:
 (A) Vienna
 (B) Zurich
 (C) Basil
 (D) Stein
 (E) Switzerland city
- Q.56. I have come here of my own free _____.
 (A) desire
 (B) choice
 (C) will
 (D) intention
 (E) option
- Q.57. The flowers have begun to _____.
 (A) fade
 (B) droop
 (C) sag
 (D) weaken
 (E) wilt
- Q.58. The grumpy old man _____ about everything during the entire trip.
 (A) complained
 (B) moaned
 (C) talked
 (D) whimpered
 (E) mumbled
- Q.59. "What _____ are you?" the immigration officer asked the refugee.
 (A) citizenship
 (B) expatriate
 (C) nationality
 (D) native
 (E) person
- Q.60. "How do you expect me to hear you if you _____?" the teacher asked impatiently.
 (A) mutter
 (B) mumble
 (C) murmur
 (D) whisper
 (E) burble
- Q.61. There is a _____ in that company for an accounts clerk.
 (A) job
 (B) prospect
 (C) post
 (D) chance
 (E) vacancy
- Q.62. "The agreement has been _____; you are no longer responsible for the consequences," he said.
 (A) annulled
 (B) completed
 (C) dropped
 (D) stopped
 (E) closed
- Q.63. The money that Rehan had found turned out to be _____.
 (A) false
 (B) counterfeit
 (C) fake
 (D) imitation
 (E) forged

- Q.64. Most of the people of the community signed the _____ to prevent the cutting down of the trees.
(A) position (B) entreaty (C) appeal (D) application (E) request
- Q.65. The _____ young men vandalized the city.
(A) illegal (B) illicit (C) unlawful (D) lawless (E) criminal
- Q.66. He was _____ to me for saving his life.
(A) appreciative (B) indebted (C) thankful (D) obliged (E) gratified
- Q.67. The citizens of the country were given _____ to have more children because the population rate was declining.
(A) inducement (B) encouragement (C) support (D) rewards (E) incentives
- Q.68. Putting on make-up cleverly will _____ your features.
(A) beautify (B) camouflage (C) enhance (D) disguise (E) dress
- Q.69. Our expenditure is _____ by a tight budget this year.
(A) ruled (B) controlled (C) restricted (D) bound (E) stopped
- Q.70. Mahmood seemed to be in great _____ when I bumped into him.
(A) speed (B) haste (C) gear (D) hurry (E) urgency
- Q.71. Electronic documents and other files are stored on a Hard disk surface in the form of _____.
(A) Word documents (B) Alphabets (C) Electronic Signals
(D) Tiny Magnetized areas (E) Light signals
- Q.72. Cache is a temporary storage area that holds data/instructions _____.
(A) to be sent to some other computer (B) to be received (C) to be processed
(D) received from other computers (E) to be stored on a secondary storage device
- Q.73. Dot Net technology is developed by _____.
(A) Cisco (B) Open Source (C) Microsoft
(D) World Wide Web Consortium (E) An International Authority that assigns IP addresses
- Q.74. If somebody says that he/she is using XP, he is most probably talking about _____.
(A) latest computer system (B) Web browsers (C) Operating system
(D) Predecessor of PC/XTs (E) Printers, capable to print multiple documents at a time
- Q.75. Which of the following is not a computer network?
(A) MAN (B) VPN (C) WAN (D) LAN (E) All are computer networks
- Q.76. The process of conversion of digital data to analog form and vice-versa is carried out by a device called _____.
(A) Scanner (B) Converter (C) Modem (D) B and C are correct (E) None of these
- Q.77. Microscopic view of a recorded CD will reveal a surface with _____.
(A) tiny illuminated spots (B) Light and dark colored spots (C) tiny magnetic crystals
(D) tiny mirror like crystal that reflect laser light (E) none of these
- Q.78. Which of the following is not a softcopy output device?
(A) CRT and LCD Monitors (B) Speech synthesizers (C) Voice-Over-IP
(D) Speakers (E) All are softcopy devices

- Q.64. Most of the people of the community signed the _____ to prevent the cutting down of the trees along the streets.
(A) petition (B) entreaty (C) appeal (D) application (E) request
- Q.65. The _____ young men vandalized the city.
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(D) Speakers (E) All of these are softcopy devices

Q.79. On a Hard disk, data is recorded in a circle like area called _____

- (A) Sector
- (B) Track/Cylinder
- (C) Files
- (D) Circular linked lists
- (E) None of these

Q.80. Cyber Surf is _____

- (A) software that makes web surfing for new users more easier
- (B) category of search engines that do not lists the web sites that may be objectionable for children
- (C) software that protects users from hacker attacks
- (D) software that keeps tracks of the visited web sites for future reference
- (E) software that blocks the web sites that may be objectionable for people, specially the children

Q.81. A software module/layer that interfaces between kernel and user is called _____

- (A) Interrupt
- (B) Icon
- (C) Shell
- (D) COM (Component Object Model)
- (E) B and C are correct

Q.82. If $1011_2 \times 1011_2 =$ _____

- (A) 1000110_2
- (B) 1104_{10}
- (C) 11202_{10}
- (D) Can't be added
- (E) None of these

Q.83. WAP is an acronym for _____

- (A) Wireless Application Protocol
- (B) Wireless Access Protocol
- (C) Web Access Protocol
- (D) Web Application Protocol
- (E) Wireless Access Point

Q.84. Which of the following is/are not programming language(s)?

- (A) Machine Language
- (B) Natural Language
- (C) HTML
- (D) B and C are correct answers
- (E) None of these

Q.85. A 3 bit binary number is to be stored in excess-1 code. In this format, numbers can be stored ranging from -4 to +3. To store a number, 4 is added to it and resulting number is converted to binary form. So the bit pattern to store zero is _____

- (A) 000_2
- (B) 001_2
- (C) 100_2
- (D) Can't be converted since it is neither positive nor negative
- (E) None of these

Q.86. Which of the following printers were the first that were used with PCs in early 1980s?

- (A) Thermal
- (B) Laser
- (C) Inkjet
- (D) Dot-matrix
- (E) None of these

Q.87. Bits are used to represent data inside a computer circuitry. These bits are in fact logical representation of _____

- (A) True and False logical values
- (B) high and low voltages
- (C) Zeros and Ones
- (D) high and low frequency signals
- (E) All of these

Q.88. To disable the cursor movement keys on the keypad, _____ key is to be _____

- (A) Scroll Lock, turned on
- (B) Shift, pressed
- (C) NumLock, turned on
- (D) NumLock, turned off
- (E) none of these, since these can't be enabled or disabled

Q.89. If addition of a new hardware does not needs manual reconfiguration of Hardware/Software of a computer system, this may be due to the _____

- (A) software support personnel
- (B) Remote Admin utility
- (C) Control Panel of Windows
- (D) Windows Registry
- (E) PnP (Plug and Play) technology

Q.90. Convert 21405_{10} to Hexadecimal number.

- (A) 8965_{16}
- (B) 2305_{16}
- (C) 10001100000101_2
- (D) All are correct
- (E) None of these

ENGLISH

Choose the correct answer (A - E) which is closest in meaning to the underlined words in each of the following questions.

- Q 76. My brother is very likely to be affected by colds.
(A) subject (B) susceptible (C) suspicious
(D) suspicious (E) susceptible
- Q 77. The criminal was kept under a steady - long term careful observation of watch by the plain cloth policemen.
(A) subrogation (B) susceptibility (C) surveillance
(D) surrealism (E) suspicion
- Q 78. He is at the highest point of his career.
(A) top (B) pinnacle (C) summit
(D) zenith (E) best
- Q 79. The children listened to the loud cry or howl of the dog.
(A) yowl (B) moan (C) groan
(D) shout (E) shriek
- Q 80. Many of today's youths are very having a tendency to attach too much importance to bodily comfort, money and success.
(A) extravagant (B) materialistic (C) spendthrift
(D) excessive (E) maternal
- Q 81. Mrs. Thomas went shopping for state becoming a mother clothes when she discovered that she was pregnant.
(A) maternal (B) motherly (C) material
(D) maternity (E) protective
- Q 82. He felt great feeling of sorrow for the troubles and sufferings of others for the old beggar.
(A) mercy (B) empathy (C) pitance
(D) pity (E) pity
- Q 83. He was a person who is slow at learning or things at school.
(A) idiot (B) imbecile (C) morn
(D) dunce (E) slow
- Q 84. There is a causing disgust smell coming from the kitchen.
(A) foul (B) stench (C) filthy
(D) odorous (E) fragrant
- Q 85. There was a share or amount of something that each person or group of people, among a number of people or groups of people, may produce or receive on the number of foreign students the university can admit.
(A) portion (B) percentage (C) quota
(D) proportion (E) share
- Q 86. He twisted violently to and fro in discomfort about when I tickled him, but he couldn't get away.
(A) contorted (B) warped (C) twisted
(D) swayed (E) writhed
- Q 87. The people gave up or surrendered to the army of the emperor.
(A) vanquished (B) yielded (C) submitted
(D) subdued (E) abandoned
- Q 88. The homesick girl felt a great longing for her home.
(A) wanted (B) craved (C) yearned
(D) required (E) desired
- Q 89. He saw to the mental and physical well-being of the children.
(A) welfare (B) glee (C) prosperity
(D) fortune (E) happiness
- Q 90. Paul had a habitual tendency to get angry easily.
(A) trend (B) tendency (C) inclination
(D) disposition (E) character

KARACHI UNIVERSITY I
GENERAL KNOWLEDGE

1. First Afghan War took place in

(A) 1839

(B) 1840

(C) 1833

(D) 1848

2. Gulf cooperation council was originally formed by

(A) Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates

(B) Second World Nations

(C) Third World Nations

(D) Fourth World Nations

3. First China War was fought between

(A) China and Britain

(B) China and France

(C) China and Egypt

(D) China and Greek

4. Dumping is

(A) selling of goods abroad at a price well below the production cost at the home market price

(B) the process by which the supply of a manufacture's product remains low in the domestic market, which hatches him better price

(C) prohibited by regulations of GATT

(D) All of the above

5. First Indo-Pak war was started in the year

(A) 1947

(B) 1948

(C) 1949

(D) 1950

6. Federation Cup, World Cup, Allywyn International Trophy and Challenge Cup are awarded to winners of

A. Tennis (B) Basketball (C) Volleyball (D) Cricket

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7. Each year World Red Cross and Red Crescent Day is celebrated on

- (A) May 8
- (B) May 18
- (C) June 8
- (D) June 18

8. Famous sculptures depicting art of love built some time in 950 AD - 1050 AD are

- (A) Khajuraho temples
- (B) Jama Masjid
- (C) Sun temple
- (D) Mahabalipuram temples

9. Friction can be reduced by changing from

- (A) sliding to rolling
- (B) rolling to sliding
- (C) potential energy to kinetic energy
- (D) dynamic to static

10. Fire temple is the place of worship of which of the following regions?

- (A) Taoism
- (B) Judaism
- (C) Zoroastrianism (Parsi Religion)
- (D) Shintoism

11. Georgia, Uzbekistan and Turkmenistan became the members of UNO in

- (A) 1991
- (B) 1992
- (C) 1993
- (D) 1994

12. During World War II, when did Germany attack France?

- (A) 1940
- (B) 1941
- (C) 1942
- (D) 1943

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13. The ozone layer restricts

- (A) Visible light
- (B) Infrared radiation
- (C) X-rays and gamma rays
- (D) Ultraviolet radiation

14. Eugenics is the study of

- (A) altering human beings by changing their genetic components
- (B) people of European origin
- (C) different races of mankind
- (D) genetic of plants

15. Euclid was

- (A) Greek mathematician
- (B) Contributor to the use of deductive principles of logic as the basis of geometry
- (C) Propounded the geometrical theorems
- (D) All of the above

1. Ecology deals with

- (A) Birds
- (B) Cell formation
- (C) Relation between organisms and their environment
- (D) Tissues

2. DRDL stands for

- (A) Defence Research and Development Laboratory
- (B) Department of Research and Development Laboratory
- (C) Differential Research and Documentation Laboratory
- (D) None of the above

3. Escape velocity of a rocket fired from the earth towards the moon is a velocity to get rid of the

- (A) Earth's gravitational pull
- (B) Moon's gravitational pull
- (C) Centripetal force due to the earth's rotation
- (D) Pressure of the atmosphere

4. For safety, the fuse wire used in the mains for household supply of electricity must be made of metal having

- (A) low melting point
- (B) high resistance
- (C) high melting point
- (D) low specific heat

5. Hamid Karzai was chosen president of Afghanistan in

- | | |
|----------|----------|
| (A) 2000 | (B) 2001 |
| (C) 2002 | (D) 2003 |

6. Durand Cup is associated with the game of

- | | |
|-------------|----------------|
| (A) Cricket | (B) Football |
| (C) Hockey | (D) Volleyball |

7. Headquarters of UNO are situated at

- (A) New York, USA
- (B) Hague (Netherlands)
- (C) Geneva
- (D) Paris

8. For seeing objects at the surface of water from a submarine under water, the instrument used is

- | | |
|------------------|---------------|
| (A) kaleidoscope | (B) Periscope |
| (C) spectroscope | (D) Telescope |

9. G-15 is an economic grouping of

- (A) First World Nations
- (B) Second World Nations
- (C) Third World Nations
- (D) Fourth World Nations

10. Fathometer is used to measure

- | | |
|-----------------|---------------------|
| (A) Earthquakes | (B) Rainfall |
| (C) Ocean depth | (D) Sound intensity |

11. For galvanizing iron which of the following metals is used?

- | | |
|---------------|------------|
| (A) Aluminium | (B) Copper |
| (C) Lead | (D) Zinc |

12. For purifying drinking water alum is used

- (A) for coagulation of mud particles
- (B) to kill bacteria
- (C) to remove salts
- (D) to remove gases

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13. Firdausi was

- (A) a poet
- (B) well known for his epic 'Shahnama'
- (C) Both option A and B
- (D) None of the above

14. Gabriel Daniel Fahrenheit was

- (A) a German Physicist
- (B) developed the mercury thermometer in 1714
- (C) devised temperature scale
- (D) All of the above

15. During the first crusade, crusaders reached Jerusalem and captured it in

- (A) 1000 AD
- (B) 1099 AD
- (C) 1200 AD
- (D) 1515 AD

PLACE IN ENVELOPE

Q16. The height of world trade center is was

- a) 1.362ft
- b) 2.362ft

- c) 4.415ft
- d) 2.482ft

Q17. What is the height of Empire State Building

- a) Chicago 1368
- b) 3,000
- c) 1,250ft

- d) 1,456
- e) 1,250

Q18. Madam Tessaup was died in

- a) 1940
- b) 1950
- c) 1890

- d) 1850
- e) 1955

Q19. Which scientist was deaf?

- a) Rutherford
- b) Antoine Lavoiser
- c) Louis Pasteur

- d) Thomas Edison
- e) Madam Curie

Q50. At what time sun rises today

- a) 6:25
- b) 6:20
- c) 6:30

- d) 5:20
- e) 5:25

Q51. "Amazon" and "Nobel" are two well know

- a) River,
- b) Websites dedicated to Amazing personalities and Nobel Prize Winner
- c) World Wide Well Known Tourism promoting companies
- d) Knowledge Management Software

Q52. When did USA dropped atom bomb at Hiroshima?

- a) 5th August 1945
- b) 24th October 1945
- c) 9th August 1945

- d) 6th August 1945
- e) 21st October 1945

Q53. How many Mirazils are their in HOLY QURAN?

- a) 6666
- b) 7
- c) 12

- d) 120
- e) 30

Q54. Which printer uses the nozzles and ink spraying while printing a page

- a) Impact
- b) Laser
- c) Thermal

- d) Non-Impact
- e) Inkjet

Q55. Which of the following is the highest capacity storage device?

- a) Disk
- b) CD-ROM
- c) Hard Disk

- d) Flash RAM
- e) Magnetic Tapes

Q56. According to Government latest report the population of Pakistan is

- a) 147.6 million
- b) 137.5 million
- c) 128.6 million

- d) 138.6 million
- e) 147.8 million

Q57. There are _____ means of communication in Pakistan

- a) 5
- b) 3
- c) 8

- d) 7
- e) 4

Q58. _____ Independent candidates won National Assembly seats in General Election 2002

GENERAL KNOWLEDGE

- a) 29
- b) 27
- c) 20

- d) 30
- e) 15

Q59. Most of the people now a day use _____ to pay the price of items purchased from an Ecommerce site

- a) Smart Card
- b) E Card
- c) Pay Card

- d) Debit Card
- e) Credit Card

Q60. The permanent representative of Pakistan at UNO is

- a) Maliha Lodhi
- b) Zafar Ali Khan
- c) Shamshad Ahmed Khan

- d) Dr. Ishrat Hussain
- e) None of these



1. The particles of Gamma radiation's are:
- (A) Photons (B) Electrons
(C) Protons (D) Helium
2. Stokes law hold for:
- (A) Bodies of all shapes (B) Motions through free space
(C) Horizontal motion of the particle (D) Motion through a viscous medium
3. A balloon contains 500 m^3 of helium at 27°C and 1 atm pressure. The volume of the helium at -3°C temperature and 0.5 atmosphere pressure will be:
- (A) 500 m^3 (B) 700 m^3
(C) 900 m^3 (D) 1000 m^3
4. A Solar cell is used to convert:
- (A) Electrical energy in to mechanical energy
(B) Electrical energy to light energy
(C) Light energy to electrical energy
(D) Light energy in to sound energy
5. Two sirens situated 1 km apart are producing sound of frequency 330 Hz . An observer start moving from one siren to the other with a speed of 2 ms^{-1} . If the speed of sound be 330 ms^{-1} what will be the beat frequency heard by the observer?
- (A) 8 (B) 4
(C) 6 (D) 1
6. To make an N-type semiconductor which of the following are used for doping:
- (A) trivalent elements (B) tetravalent elements
(C) pentavalent elements (D) silicon
7. For capacitors connected in series:
- (A) The difference of potential is the same for all
(B) The charge on each is the same
(C) The resultant capacitance is greater than the sum of the individual capacitance
(D) The resultant capacitance is equal to the sum of the individual capacitance
8. The law that governs the forces between electric charges was given by:
- (A) Faraday (B) Newton
(C) Ampere (D) Coulomb
9. The apparatus used to compare the emf. Of two cells is:
- (A) a wheatstone bridge (B) a galvanometer
(C) a potentiometer (D) an ammeter

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10. In three dimensional spaces, the position vectors of points is given by:

(A) $\vec{r} = 0 + y\hat{j} + z\hat{k}$

(B) $\vec{r} = x\hat{i} + y\hat{j} + 0$

(C) $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$

(D) $\vec{r} = y\hat{j} + z\hat{k}$

11. When capacitance C_1 , C_2 , & C_3 are connected in parallel, the net capacitance 'C' is:

(A) $C = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}$

(B) $C = \frac{C_1 + C_2 + C_3}{C_1 \times C_2 \times C_3}$

(C) $\frac{1}{C} = C_1 + C_2 + C_3$

(D) $C = C_1 + C_2 + C_3$

12. One end of a metal rod is placed in a Bunsen flame very hot, the other end becomes hot.

(A) Conductions

(B) Convection

(C) Radiation

(D) Insulation

13. A wire is heated to a high temperature and electron are given off. This is known as:

(A) Photo Electricity

(B) Fluorescence

(C) Phosphorescence

(D) Thermionic Emission

14. Which of the following is transmitted by wave?

(A) Energy

(B) Medium

(C) Momentum

(D) Both (A) and (C)

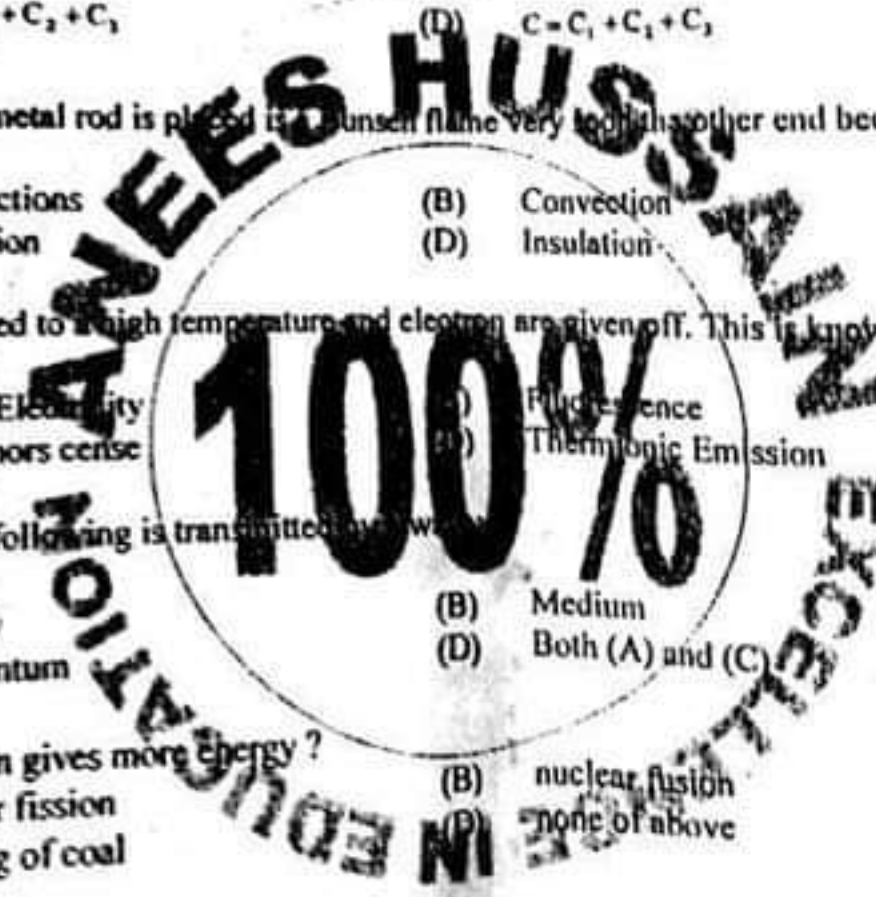
15. Which reaction gives more energy?

(A) nuclear fission

(B) nuclear fusion

(C) burning of coal

(D) none of above



PHYSICS

1. Inertia is the property of:

(A) Volume	(B) Strength
(C) Mass	(D) Force
2. Which is a correct statement?

(A) Isothermal curve is steeper than adiabatic	(B) Adiabatic curve is steeper than isothermal curve
(C) Both are equally steep.	(D) Both run parallel to each other.
3. A Domestic Electricity meter measures in unit of:

(A) volt	(B) kilowatt
(C) k.watt hour	(D) ampere
4. A Voltmeter is used for:

(A) studying electrolysis	(B) measuring resistance
(C) measuring potential difference	(D) measuring potential difference
5. Capacity or ability to perform work is called;

(A) Power	(B) Energy
(C) Force	(D) Horse power
6. When a body is moving with constant velocity it has

(A) negative acceleration	(B) positive acceleration
(C) deceleration	(D) no acceleration
7. Difference in potential is measured in:

(A) N/C	(B) Volts
(C) Coulombs	(D) Ampere.
8. The angular displacement is measured in:

(A) Degrees	(B) Radians
(C) Revolutions	(D) All of these
9. One rise and one fall of loudness of sound make:

(A) one beat	(B) one resonance
(C) one harmonic	(D) one overtones

10. Power is defined as:

- (A) Rate at which an agency does work
(B) Total work done by an agency
(C) Both A & B are true
(D) Both A & B are wrong

11. A pendulum on the earth has a time period of 1 second. Its time period in a box orbiting around the earth at a distance R from the surface of the earth will be? (R = radius of the earth)

- (A) 5π
(B) 1 s
(C) zero
(D) infinity

12. Which one of the following properties is not found in both sound and light.

- (A) interference
(B) diffraction
(C) polarization
(D) reflection

13. A stone is dropped from high rock and at the time, another stone of same mass is thrown horizontally with a velocity of 200 m/s . which one will reach the ground first? (neglect the air friction).

- (A) first stone
(B) second stone
(C) both will reach at same time
(D) cannot be determined from the given data

14. Heat is flowing from higher to lower temperature through actual mass motion of the molecules is due to:

- (A) Radiation
(B) Convection
(C) Conduction
(D) None of these

15. For constructive interference, the path difference between the two interfering waves coming from his coherent source should be:

- (A) odd multiple of $\lambda/4$
(B) even multiple of $\lambda/2$
(C) odd multiple of $\lambda/2$
(D) even multiple of $\lambda/4$

PHYSICS

c) R

e) $4R$

d) $2R$

Q74. A ordinary magnifying glass produces an image which is:

a) Real and erect

d) Virtual and erect

b) Real and inverted

e) None of the above

c) Virtual and Inverted

Q80. If the refractive index of water is 1.50 and the refractive index of glass 1.33 the total internal reflection at an interface between this glass and water

a) Occurs whenever the light goes from glass to water

b) Occurs whenever the light goes from water to glass

c) May occur when the light goes from water to glass

d) May occur when the light goes from glass to water

e) Can never at this interface

PHYSICS

- Q61. The average speed of a moving object during a given interval of time is always
- its speed at any point
 - The distance covered during the time interval divided by the time interval
 - One half its speed at the end of the interval
 - Its acceleration multiplied by the time interval
 - One half its acceleration multiplied by the time interval
- Q62. At time $t = 0$ a car has a velocity of 16 m/s . It slows down with an acceleration given by -0.50 m/s^2 for t in s . It stops at $t =$

- 64s
- 32s
- 16s
- 80s
- 40s

Q63. Displacement can be obtained from

- Slope of an acceleration-time graph
- Slope of a velocity-time graph
- Area under acceleration-time graph
- Area under a velocity-time graph
- Slope of an acceleration-time graph

Q64. The amount of work required to stop a moving object is equal to the

- Velocity of the object
- Kinetic energy of the object
- Mass of the object times its acceleration
- Mass of the object times its velocity
- Square of the velocity of the object

Q65. A ball is thrown into the air. As it rises, there is an increase in its

- Acceleration
- Potential energy
- Velocity
- Momentum
- Kinetic energy

Q66. The newton second is a unit of

- Work
- Linear momentum
- Angular momentum
- None of these
- Power

Q67. An object attached to one end of a spring makes 20 vibrations in 10 seconds. Its period is

- 2 Hz
- 10s
- 0.5 Hz
- 0.50s

rwrites.

PHYSICS

Q68. A loaded ship passes from a lake (fresh) to the ocean (salt water). Salt water is more dense than fresh water and as result the ship will

- a) Ride higher in the water
- b) Settle lower in the water
- c) Ride at the same level in the water
- d) Experience an increase in buoyant water
- e) Experience a decrease in buoyant force

Q69. The ratio of specific heat of a gas at constant volume to its specific heat at constant pressure is:

- a) 1
- b) Less than 1
- c) More than 1
- d) Has units of pressure/volume
- e) Has unit of volume/pressure

Q70. "Beats" in sound refer to:

- a) Interference of two waves of the same frequency
- b) Combination of two waves of slightly different frequency
- c) Reversal of phase of slightly different sound velocities
- d) Two media having slightly different sound velocities
- e) Effect of relative motion of source and observer

Q71. The heat capacity of object B is twice the heat capacity of the object A. Initially A is at 300 K and B is at 450 K. They are placed in thermal contact and the combination is isolated. The final temperature of both objects is:

- a) 200K
- b) 300K
- c) 400K
- d) 450K
- e) 250K

Q72. A charged capacitor stores 10C at 40V. Its stored energy is:

- a) 400J
- b) 4J
- c) 0.2J
- d) 2.5J
- e) 200J

Q73. A certain wire has resistance R. Another wire, of the same material has half the length and half the diameter of the first wire. The resistance of the second wire is:

- a) $R/4$
- b) $4R$

1. A street named _____ mayor of the town.
(A) after (B) as (C) for (D) by
2. This money will be reserved _____ charitable purposes.
(A) to (B) for (C) at (D) in
3. I am just a little girl _____ Little Rock.
(A) from (B) with (C) along (D) for
4. Room 64 was half way _____ on the right.
(A) towards (B) across (C) along (D) off
5. The whole nation was _____ the president.
(A) behind (B) after (C) before (D) for
6. She said, "I am too weak to walk."
(A) She said that I was too weak to walk.
(B) She said that he was so weak to walk.
(C) She said that she was too week to walk.
(D) She said that she was too weak to walk.
7. Amir said to me, "Thank you very much for your kind help today."
(A) Amir thanked him very much for my kind help that day.
(B) Amir thanked me very much for his kind help that day.
(C) Amir thanked me very much for my kind help that day.
(D) Amir thanked me very much for my kind help today.
8. He said, "How is your health now?"
(A) He asked how his health was then.
(B) He asked how my health was then.
(C) He asked how my health is then.
(D) He asked how my health was now.
9. "Are you going to join school today?" said the mother to the boy.
(A) The mother asked the boy weather he was going to join school that day.
(B) The mother asked the boy whether I was going to join school that day.
(C) The mother asked the boy whether he was going to join school that day.
(D) The mother asked the boy whether he was going to join school today.
10. "What is your name and who are you?" said the policeman.
(A) The policeman asked what my name was and who I was.
(B) The policeman asked what his name was and who I was.
(C) The policeman asked what my name is and who I was.
(D) The policeman asked what my name was and who he was.

PASSAGE: Answer Questions 11 - 15 based on the following passage

Lew Archer, the detective hero created by Rose Mac Donald in "The Moving Target" (1949), is more literary in the tastes than Mike Hammer, and so more apt to muse on fate and the past than to create a political philosophy out of the individualist fantasies of the present. In part Archer owes his special sensitivity to the fact that his creator placed him in the hastily thrown up world of California and the west coast rather than in the grimy eastern cities of Spillane and Hammer. Attuned to history as much as to action, Archer is more fascinated by the past patterns of relationships that erupt into the present than by the immediacies of violence and personal confrontation. Like other American naturalists, both Archer and Hammer pride themselves on their ability to be known in all the parts of town and country. But Mac Donald explores what Spillane essentially disregards the intricacies of family and the gradation of social class. This Spillane's hero seems to spring from Hammer and Hemingway, while Mac Donald's Archer owes his linkage to Chandler and Faulkner.

11. What is the author's main purpose in the passage?
 - (A) To explain the plot of the Moving Target
 - (B) To show the importance of setting in the detective novel
 - (C) To prove that Archer and Hammer are literary heroes
 - (D) To compare two characters in detective fiction
12. In the second sentence of the passage, the word "creator" refers to a
 - (A) Fantasist
 - (B) Naturalist
 - (C) Writer
 - (D) Philosopher
13. Which of the following is **LEAST** likely to be characteristic of an Archer story?
 - (A) A violent argument
 - (B) A California setting
 - (C) A concern with social class
 - (D) A study of family relationship
14. Which of the following best describes Mac Donald's relationship to Chandler and Faulkner?
 - (A) Mac Donald portrayed the lives of Chandler and Faulkner in one of his novel.
 - (B) Mac Donald followed in the tradition of Chandler and Faulkner.
 - (C) Mac Donald influenced the work of Chandler and Faulkner.
 - (D) Mac Donald disregarded the intricacies of Chandler and Faulkner.
15. The paragraph preceding the passage probably discussed the writing of which of the following individuals?
 - (A) Hemingway
 - (B) Chandler
 - (C) Spillane
 - (D) Faulkner

1. Hydrogen gas can be used _____ a fuel.
(A) for (B) as (C) of (D) like
2. All of us must abide _____ the laws of our country.
(A) on (B) by (C) for (D) at
3. She will compete _____ the prize since it represents her fondness for it.
(A) for (B) to (C) of (D) at
4. Police said they found thirty bodies _____ the wreckage.
(A) in (B) between (C) among (D) in front of
5. People _____ quality do not gossip all the time.
(A) with (B) for (C) at (D) of
6. "Sir, you had better let me take horse to blacksmith to have a shoe put on," said the servant to the master.
(A) The servant suggested the master politely to let me take the horse to have a shoe put on.
(B) The servant suggested the master politely to let him take the horse to have a shoe put on.
(C) The servant suggested the master politely to let him took the horse to have a shoe put on.
(D) The servant suggested politely the master to let him take the horse to have a shoe puts on.
7. The teacher said to the student angrily, "Why have you disturbed the class. Leave the room and do not return today."
(A) The teacher asked the student angrily why he has disturbed the class, and ordered him to leave the room and not to return that day.
(B) The teacher asked the student angrily why he had disturbed the class, and orders him to leave the room and not to return that day.
(C) The teacher asked the student angrily why he had disturbed the class, and ordered him to leave the room and not to return today day.
(D) The teacher asked the student angrily why he had disturbed the class, and ordered him to leave the room and not to return that day.

13. (A) How beautiful is the night!
 (B) How beautiful is the night,
 (C) How beautiful is the night:
 (D) How beautiful is the night.
14. (A) Alas, he is dead!
 (B) Alas: he is dead!
 (C) Alas; he is dead!
 (D) Alas, he is dead!
15. (A) "They gave me," he said, "strict orders, you are not to open that gate under any circumstances whatever." "
 (B) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever,'" "
 (C) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever,'" "
 (D) "They gave me," he said, "strict orders, 'you are not to open that gate under any circumstances whatever,'" "

8. She said to the king, "Has your Majesty any doubt of this man's guilt? There is the very sword with which he meant to kill you."
- (A) She asked the king with great regards whether his Majesty had any doubt of that man's guilt and said that there was the sword with which he meant to kill him.
- (B) She asked the king with great regards that whether his Majesty had any doubt of that man's guilt and said that there was the sword with which he meant to kill him.
- (C) She asked the king with great regards whether my Majesty had any doubt of that man's guilt and said that there was the sword with which he meant to kill him.
- (D) She asked the king with great regards whether his Majesty had any doubt of that man's guilt and said that there is the sword with which he meant to kill him.
9. "Sir, I want the work. May I earn a penny?" said the Lad.
- (A) The Lad told humbly that he wanted work and took permission whether he might earn a penny.
- (B) The Lad says humbly that he wanted work and took permission whether he might earn a penny.
- (C) The Lad told humbly that he wanted worked and took permission whether he might earn a penny.
- (D) The Lad told humbly that he wanted work and took permission whether he might earned a penny.
10. "What do you want to know?" the Owl said. "The wild goose is an inhabitant of many parts of globe."
- (A) The Owl asked what did he want to know and told that wild goose was an inhabitant of many parts of globe
- (B) The Owl asked what he wanted to know and told that wild goose was an inhabitant of many parts of globe
- (C) The Owl asked what he wanted to know and tells that wild goose was an inhabitant of many parts of globe
- (D) The Owl asked what he wanted to know and told that wild goose has been an inhabitant of many parts of globe

PASSAGE: Answer Questions 11 - 12 based on the following passage

The scientific name of the koala is *Phascolarctos cinereus*, from the Greek for "pouched bear" and "ash gray." The koala lives in trees, specifically some 35 of the more than 600 species of the genus *Eucalyptus* that grow in Australia. The diet of the adult koala is almost exclusively eucalyptus leaves and since the oils of eucalyptus leaves are toxic to most other mammals, one of my own works with koalas, and I shall be returning to it.

11. According to the passage, how many species of *Eucalyptus* does the mature koala feed on?
- (A) Less than 25 (B) Approximately 40
- (C) Approximately 600 (D) Exactly 635
12. According to the passage, which of the following statements is true about the adult koala's food?
- (A) It is very difficult to obtain.
- (B) It consists of both leaves and bark.
- (C) It is almost completely restricted to eucalyptus leaves.
- (D) It varies according to the season.

CHEMISTRY

- The concentration unit for which concentration of solution does not depend upon temperature is
 - Molarity
 - %W/V
 - %V/V
 - Molality
- One mole of ethyl alcohol was treated with one mole of acetic acid at 95 °C two third of the acid changes into ester at equilibrium. The equilibrium constant for the reaction will be.
 - 1
 - 2
 - 3
 - 4
- The pK_b value is lowest for which of the following bases
 - NH_4OH
 - $Ca(OH)_2$
 - $NaOH$
 - $Al(OH)_3$
- Rutherford model of atom is considered weak because
 - Positive charged nucleus cannot remain separated from negatively charged electron
 - An accelerated electron would continuously lose energy in the form of radiation
 - Nuclear mass is not sufficiently heavy to keep the light of electron in its orbits
 - The centre of the gravity of the system would be within the volume of the nucleus
- Radioactive decay is reaction of
 - Zero order
 - First order
 - Second order
 - Third order
- Relative rates of diffusion of two gases X and Y are found to be 3:2. If the density of Y is 27 the density of X is
 - 27
 - 54
 - 4
 - 12
- D-block elements generally form
 - Covalent hydrides
 - Interstitial hydrides
 - Metallic hydrides
 - Salt like hydrides
- The common name of trichloro methane is
 - Aniline
 - Chloroform
 - Ethanol
 - None
- The density of water is
 - Equal to that of ice
 - Greater than that of ice
 - Less than that of ice
 - All are possible
- Rising of a liquid in a capillary tube is due to
 - Surface tension
 - Cohesive forces
 - Adhesive forces
 - Viscosity
- When we heat orthoboric acid up to 100 °C it is converted into:
 - Pyro boric acid
 - Metaboric acid
 - Boric acid
 - All
- Open chain compounds are also called:
 - Aliphatic
 - Alicyclic
 - Aromatic
 - Both a & b
- The formula of starch
 - C_2H_5OH
 - $C_6H_{12}O_5$
 - $C_6H_{10}O_5$
 - $C_6H_{12}O_6$
- When any solid is changed to gas without melting the process is called
 - diffusion
 - boiling

16. Alkyl halides mostly undergo the
- b. ethyl chloride
 - a. Electrophilic Substitution reaction
 - b. Electrophilic addition reactions
 - d. All of these
 - c. Nucleophilic substitution reaction
 - d. Nucleophilic addition reaction
17. The wood spirit is
- a. Formaldehyde
 - b. Ethanol
 - c. Methanol
 - d. Phenol
18. Carbohydrates provide following amount of energy to the body
- a. 2-3 cal/g
 - b. 7-8 cal/g
 - c. 4-5 cal/g
 - d. 9-10 cal/g
19. Elements of group IB are called
- a. Coinage metals
 - b. Normal elements
 - c. Rare earths
 - d. Transition elements
20. In Nitric acid the oxidation number of Nitrogen is:
- a. +1
 - b. +3
 - c. +5
 - d. +7

CHEMISTRY

- When gases are allowed to expand suddenly they
 - heat up
 - collapse
 - react
 - cool
- The SI unit for the measurement of pressure of gas is
 - Newton
 - Pascal
 - Pound
 - Corelomb
- The temperature scale showing the freezing point of water as 0° is called
 - Fahrenheit
 - Kelvin
 - Absolute
 - Celcius
- By compression all gases can be converted to
 - Solid
 - Liquid
 - liquid and then solid
 - liquid only
- With decrease in temperature the kinetic energy of the molecules
 - decreases
 - increases
 - does not change
 - remains same
- Generally rise of 10°C of the temperature of a reaction system, the reaction rate
 - increases
 - doubles
 - subsides
 - drops
- Energy of activation is usually expressed in
 - joules
 - calories
 - ergs
 - newtons
- When iron pyrites burn in the air, the gas produced is
 - SO_2
 - H_2S
 - SO
 - CO_2
- In the visible spectrum of light, the shortest wave length is that of
 - red colour
 - violet colour
 - green colour
 - yellow colour
- Esterification is the process in which an ester is formed from
 - An alcohol and an aldehyde
 - An aldehyde and a carboxylic acid
 - An alcohol and a carboxylic acid
 - Both a and b
- The oxidation number of sulphur in SO_4^{2-} is
 - +2
 - +6
 - +4
 - +8
- Some chemical reactions proceed only under the influence of light such reactions are known as the
 - Photochemical reaction
 - thermal reactions
 - Reversible reactions
 - Natural reactions
- Alkane and alkene may be distinguish chemically by using
 - KMnO_4 solution
 - Cl_2 water
 - Br_2 Solution
 - Both a and c
- The following compound is used as Anti knocking agent in hydrocarbon fuel
 - $\text{Pb}(\text{C}_2\text{H}_5)_4$
 - $\text{Pb}(\text{C}_2\text{H}_3)_4$
 - $\text{Pb}(\text{C}_2\text{H}_5)_4$
 - $\text{Pb}(\text{CH}_3)_4$
- Ethene may be prepared from
 - Ethyne
 - ethyl alcohol

- c. sublimation
d. distillation
15. Na_2CO_3 turns red litmus blue b/c of the formation of.

a. Strong Base
b. Strong Acid
c. Neutral Salt
d. Common Salt

16. Internal resistance to the flow of liquid is called.

a. Coefficient of viscosity
b. Resistance

17. PbO is commonly named as.

a. Red Lead
b. White Lead

c. Velocity

d. Viscosity

18. For a chemical reaction



The threshold energy of reaction is 50 KJ/mole . The average internal energy of A is 25 KJ/mole . The activation energy of A is:

a. 25 KJ/mole
b. 50 KJ/mole
c. 100 KJ/mole

d. 125 KJ/mole
e. 0 KJ/mole

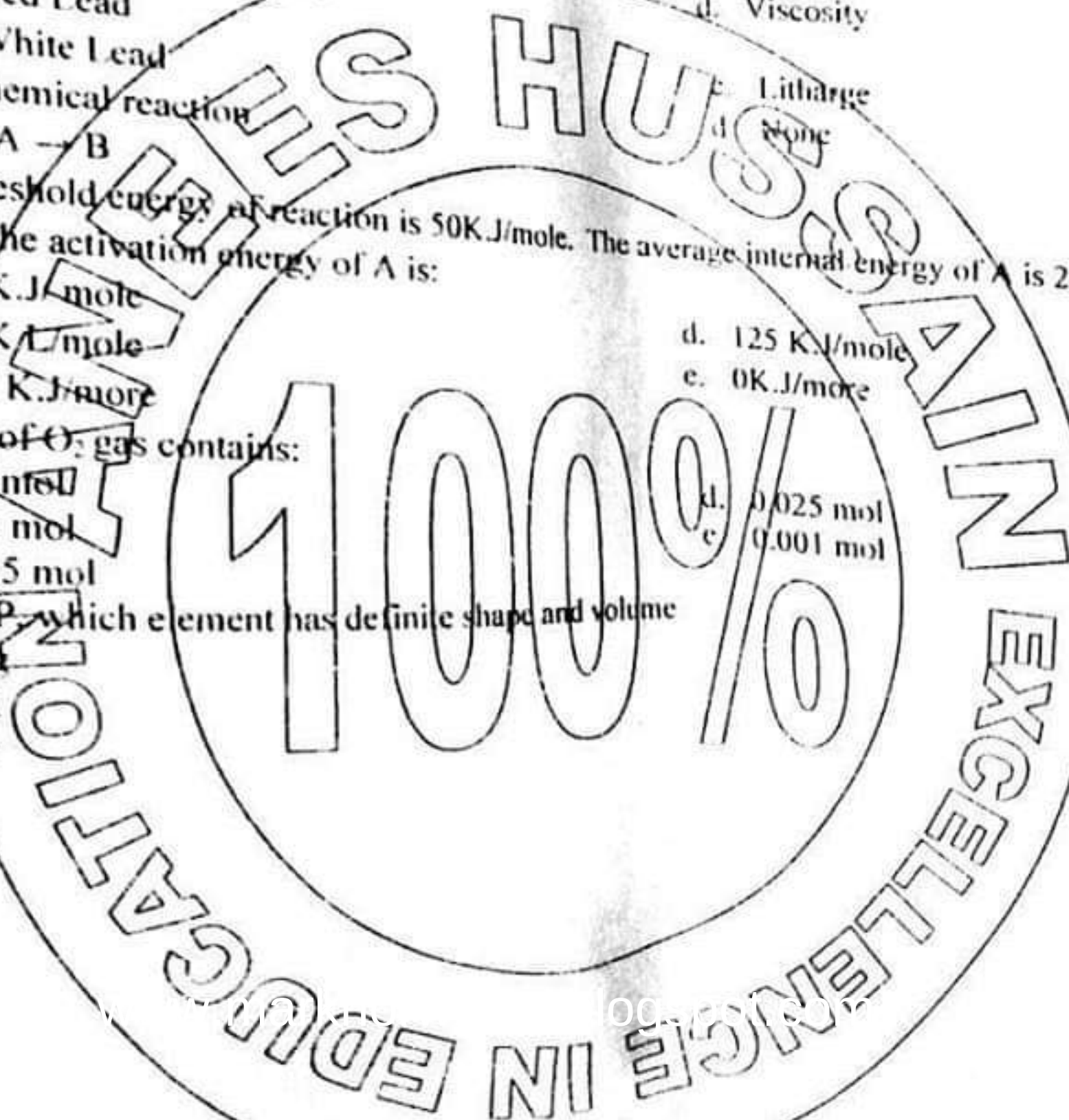
19. 8 gram of O_2 gas contains:

a. 25 mol
b. 2.5 mol
c. 0.25 mol

d. 0.025 mol
e. 0.001 mol

20. At S.T.P., which element has definite shape and volume

a. Ag
b. Hg
c. Xe
d. N



17. Metallic bonds are present in all _____.
- A. Metals
B. Alloys
C. Ionic compounds
D. Both a and b
18. If the calculated value of ratio between concentrations of products and reactants is higher than then value of K_c at any moment then _____.
- A. Reaction will proceed in forward direction
B. Reaction will proceed in backward direction
C. Reaction will be at equilibrium stage
D. Both a and b
19. The electrode potential of hydrogen electrode is supposed to be _____.
- A. Unity
B. 10
C. 4
D. Zero
20. In following reaction the rate may be reduced to one fourth by decreasing the concentration of one half _____.
- A. CO
B. O_2
C. CO_2
D. Both a and b
- $2CO + O_2 \rightarrow 2CO_2$

CHEMISTRY

1. 0.0001 has _____ Significant figures.

- A. 1
C. 4

- B. 2
D. 5

2. Poise is a unit of

- A. surface tension
C. polarity

- B. viscosity
D. solubility

3. A molecule having complete octet and one lone pair of electrons may form a

- A. Covalent bond
C. Ionic bond

- B. Coordinate covalent bond
D. Metallic bond

4. For the following reaction the value of K_p is higher than K_c

- A. $N_2 + 3H_2 \rightleftharpoons 2NH_3$
C. $2SO_2 + O_2 \rightleftharpoons 2SO_3$

- B. $2NH_3 \rightleftharpoons N_2 + 3H_2$
D. $H_2 + Cl_2 \rightleftharpoons 2HCl$

5. During the electrolysis cations move towards cathode where they are reduced by

- A. Oxidation process
C. Neutralization process

- B. Reduction process
D. Hydration process

6. In terms of electrolysis SHE means

- A. Standard hydration energy
C. Standard hydration enthalpy

- B. Standard hydrogen electrode
D. All of these

7. The rate of a reaction may be increased by using the

- A. High concentration of reactants
C. Negative catalyst

- B. Positive catalyst
D. Both a and b

8. The formula for Magnesite ore is

- A. $MgCO_3$
C. MgO

- B. $MgCO_3 \cdot MgCl_2$
D. $MgCO_3$

9. If Bauxite ore of Aluminum contains the impurity SiO_2 in large quantity then it is purified by

- A. Hall's process
C. Bayer's process

- B. Ser-puk's process
D. Deacon's process

10. The polymers formed by addition polymerization exclude

- A. Polyethylene
C. Bakelite

- B. P.V.C
D. Both a and b

11. What is true about S_N1 reaction of alkyl halides

- A. It is one step reaction
C. It is very fast in non-polar solvent

- B. It requires a polar solvent
D. Both a and b

12. Molasses is obtained from waste product of

- A. Petroleum
C. Wheat

- B. Sugar-cane
D. All of these

13. The pH of human blood is

- a. 7.00
b. 7.35

- c. 7.50
d. 7.80

14. Chemically all types of glass are

- A. Metallic carbonates
C. Metallic silicates

- B. Non-metallic carbonates
D. Non-metallic silicates

15. If all the volumes are measured at STP, the volume of NH_3 formed, when 500dm^3 of Nitrogen combines with H_2 is

- A. 1500dm^3
C. 1000dm^3

- B. 250dm^3
D. 500dm^3

16. All the wetting liquids show

CHEMISTRY 1	
1	A
2	D
3	C
4	B
5	A
6	D
7	B
8	B
9	B
10	A
11	B
12	A
13	C
14	C
15	A
16	D
17	C
18	A
19	C
20	A

CHEMISTRY 2	
1	D
2	B
3	D
4	C
5	A
6	B
7	A
8	A
9	B
10	C
11	B
12	A
13	D
14	B
15	D
16	C
17	C
18	C
19	A
20	C

CHEMISTRY 3	
1	A
2	B
3	B
4	B
5	B
6	B
7	D
8	A
9	B
10	D
11	B
12	B
13	B
14	C
15	A
16	B
17	D
18	18
19	D
20	A

PHYSICS

KU answer key 1

1. A
2. D
3. C
4. C
5. B

6. C
7. B
8. D
9. C
10. C

11. D
12. A
13. D
14. D
15. B

KU ANSWER 2

1. C
2. B
3. C
4. D
5. B

6. D
7. B
8. D
9. A
10. A

11. D
12. C
13. C
14. B
15. B

KU ANSWER 3

1. B
2. B
3. D
4. B
5. D

6. D
7. E
8. A
9. B
10. B

11. C
12. E
13. D
14. D
15. B