DEERWALK INSTITUE OF TECHNOLOGY			
DWIT B.Sc.CSIT APTITUDE TEST : SET [A]			
DATE	**SEPTEMBER 7, 2014**	**FULL MARK**	**100**
TIME	**2.5 Hrs**	**PASS MARK**	**40**
START	**11:00 AM**	**END**	**1:30 PM**

INSTRUCTIONS

- *Do not write anything on the question paper.*
- *Please write your roll number very clearly on the front page of the answer sheet.*
- *If you think the question is wrong, you will be give appropriate mark for attempting that question. You need NOT discuss that with the invigilator.*
- *If you need any kind of help please raise your hand. Good luck and all the best.*

ENGLISH PART I [5] MARKS

Choose the correct words and complete the sentences

1. Namdol likes to walk _____drive to work.

    a. rather than   b. more than   c. as much as   d. at the same time as

2. Sulab _____ football with his friends every Sunday.

    a. plays   b. is playing   c. has played   d. will play

3. The drive uphill was _____ than we expected.

    a. as smooth as   b. smooth   c. smoother   d. smoothest

4. The doctor told me _____on time for the next appointment.

    a. coming   b. come   c. to come   d. will come

5. Sheila plays on the same team _____ me.

    a. with   b. than   c. as   d. on

ENGLISH PART II [5] MARKS

Choose the correct words and complete the sentences

1. The fruit was _____ from lying in the sun for too long.

    a. reposing   b. rank   c. rustic   d. refrigerated

2. Narayan is left out of most parties because he behaves_____.

    b. obnoxiously   b. occasionally   c. originally   d. ordinary

3. He manages to impress people because he _____ confidence.

    c. eludes   b. exudes   c. includes   d. elides

4. Your _____always cheers me up when I'm feeling low.

    a. elusion   b. enervation   c. exuberance   d. exertion

5. He was accused of sedition for speaking publicly against his country's policies.

    a. senility   b. sedition   c. sadism   d. sadism

ENGLISH PART III [10] MARKS: READING COMPREHENSION

It is worth saying something about the social position of beggars, for when one has consorted with them, and found that they are ordinary human beings, one cannot help being struck by the curious attitude that society takes towards them. People seem to feel that there is some essential difference between beggars and ordinary "working" men. They are a race apart--outcasts, like criminals and prostitutes. Working men "work," beggars do not "work"; they are parasites, worthless in their very nature. It is taken for granted that a beggar does not "earn" his living, as a bricklayer or a literary critic "earns" his. He is a mere social excrescence, tolerated because we live in a humane age, but essentially despicable.

Yet, if one looks closely one sees that there is no *essential* difference between a beggar's livelihood and that of numberless respectable people. Beggars do not work, it is said; but, then, what is *work*? A navvy works by swinging a pick. An accountant works by adding up figures. A beggar works by standing out of doors in all weathers and getting varicose veins, chronic bronchitis, etc. It is a trade likes any other; quite useless, of course--but, then, many reputable trades are quite useless.

1. The writer thinks that it is worthwhile to discuss the social position of beggars, because
   a. Author loves beggars   b. Author used to be a beggar once upon a time
   c. Like people following any profession, they too are inseparable part of the society
   d. neither a, b or c

2. The sentence that best explains the phrase "they are parasites, worthless in their very nature" means in the context of this passage
   a. beggars are insects'   b. They cannot be found in nature
   c. beggars, they depend on others to survive   d. all a, b and c

3. What is the antonym of chronic?
   a. constant   b. never-ending   c. persistent   d. Intermittent

4. If an accountant works by adding figures, how does a beggar work?
   b. does not work   b. by asking for money   c. by begging for food   d. by singing

5. What does consorted mean in the context of the above passage?
   a. associated   b. worked with   c. befriended   d. hated

6. What does excrescence mean in the context of the above passage?
   a. waste   b. an unnatural and unwanted growth   c. intolerable
   d. sadness

ENGLISH PART IV [15] MARKS: WRITING [MAXIMUM 500 WORDS]

A. You learn the most important lessons in life through experience not study. Do you agree or disagree with the above statement? Write an essay arguing your position.

[OR]

B. Your best friend is confused about whether or not to leave her/his hometown to come to Kathmandu for further studies. What would you advise her/him? Write an email to convince her/him of your belief.

CHEMISTRY [10] MARKS

Choose the correct answer

1. For azimuthally quantum number l=3, the maximum number of electron will be
   a. 2   b. 6   c. 0   d. 14

b. The formation of a chemical bond is accompanied by
   a. Increase in energy   b. Decrease in energy   c. Neither increase nor decrease in energy
   d. None

3. Volume of 4.4g of CO_2 at NTP is
   a. 22.4l   b. 11.2l   c. 44.8l   d. 2.24l

4. Normality of 2m sulphuric acid is
   a. 2 N   b. N/2   c. 4N   d. N/4

5. The P^H of normal KOH is
   a. 1   b. 0   c. 14   d. 7

6. The unit of second order reaction rate constant is
   a. $litre^{-1}mol\ sec^{-1}$ b. $litre\ mole^{-1}\ sec^{-1}$ c. $litre^2 mole^{-2}\ sec^{-1}$ d. sec^{-1}

7. H, E, P and V are related as
   a. H=E+p-V   b. H= E-PV   c. H= E+PV   d. H= P-EV

8. Phenol on treatment with conc. HNO_3 gives
   a. Picric acid   b. Styphinic acid   c. Both   d. None

9. An alkyl halide can be converted into alcohol by
   a. Addition   b. Elimination   c. Substitution   d. Dehydrogenation

10. An isonitrile on reduction gives
    a. 3° amine   b. 2° amine   c. 1° amine   d. None

PHYSICS [20] MARKS

Choose the correct answer

1. 10^{-18} meter is
   a. Femto meter   b. Atto meter   c. Pico meter   d. Light year

2. Two projectiles are fixed from the same point with the same speed at angles of projection 60^0 and 30^0 respectively. Which one of the following is true?
   a.   Their range will be equal   b. Their maximum height will be the same
   c. Their landing velocity will be the same   d. Their time of flight will be same

3. A particles move in a circle of a radius 25cm at 2rev/sec. The acceleration of the particle in m/s^2 is
   a. Π^2 b. $4\Pi^2$ c. $2\Pi^2$ d. $8\Pi^2$

4. g is the acceleration due to gravity at the equator. Its value at the pole is
   a. greater than g   b. less than at equator   c. lesser than g   d. none of the above

5. the moment of inertia of a solid sphere of mass M radius R about its diameter is
   a. $2/3MR^2$ b. $2/5 MR^2$ c. $3/5 MR^2$ d. $7/5 MR^2$

6. A difference of temperature of 25^0 is equivalent to a difference of
   a. 25K   b. 150K   c. 176K   d. 120k

7. The top of a lake is frozen and air is at -10^0C. Then temperature of water at bottom of the lake is
   a. -10^0C b. 0^0C c. 4^0C d. 6^0C

8. The image of an object situated at twice of the focal length of diverging lens will be.
   a. Of same size as the object   b. Enlarged   c. Inverted   d. Virtual

9. Which of the following forms erect object?
   a. Compound microscope   b. Astronomical microscope   c. Eye   d. Galilean telescope

10. The frequency of radio waves is 15 Mhz What is its wavelength?
    a. 20m   b. 15m   c. 5m   d. 25m

11. An electric field can deflect
    a. X-rays   b. Neutrons   c. Alpha particles   d. Gamma rays

12. The potential difference between the two charged parallel plates separated by 1mm is 100V, then the electric field produced is
    a. 10^{-5}V/m   b. 10^{5}V/m   c. 10^{3}V/m   d. 10^{-3}V/m

13. The resistance of the conductor is 5 Ohm at 50^{0}C and 6 Ohm at 100^{0} C. What is the resistance at 0^{0}C
    a. 1 Ohm   b. 2 Ohm   c.3 Ohm   d. 4 Ohm

14. Which of the following is used in the core of electromagnet?
    a. Soft iron   b. Soft steel   c. Soft aluminum   d. Soft zinc

15. If frequency of light in photoelectric effect is double then stopping potential will become
    a. Double   b. Half   c. More than double   d. Less than double

16. Which of the following has maximum energy?
    a. X-rays   b. Gamma rays   c. Cosmic rays   d. UV rays

17. The silicon semiconductor formed by doping trivalent atom will be a
    a. N-type   b. P-type   c. N-p-n type   d. P-n-p type

18. The ratio of charge to mass ratio of proton to alpha particle equals
    a. 2   b. 4   c. ½   d. ¼

19. The minimum distance of a reflector to hear the echo of sharp sound in terms of speed of sound V is
    a. V/20   b. V/10   c. V/5   d. 10V

20. All gas at same temperature have same
    a. Density   b. RMS speed   c. K.E.   d. None of above

STATISTICS [10] MARKS

Choose the correct answer

1. What is function of statistics?
   a. deal with individual   b. deal with qualitative phenomenon   c. liable to be misused
      d. simplifies complexity

2. What is discrete variable?
   a. length   b. temperature   c. no of students in a class   d. breadth

3. What is suitable measure of average for open end class?
   a. HM   b. Median   c. Mode   d. AM

4. Which of the following is independent of change of origin and scale?
   a. central tendency   b. dispersion   c. skewness   d. correlation

5. What is the probability that a leap year selected at random contains 53 Saturday?
   a. $\frac{1}{7}$ b. $\frac{2}{7}$ c. 0   d. 1

6. If A and B are independent events with probability $P(A)=\frac{2}{3}$ and $P(B) = \frac{3}{5}$, find P(AUB)?
   a. 13/15   b. 1   c. 19/15   d. 2/5

7. What is mode of 161 ,162, 163, 161, 163, 164, 164, 160, 165, 163 , 164, 165, 166, 164?
   a. 160   b. 162   c. 164   d. 166

8. For a group of 10 items $\sum x=452$, $\sum x^2=24270$ and mode $=43.7$, find pearson's coefficient of skewness?
   a. 0.57   b. 0.68   c. 0.21   d. 0.076

9. If the covariance between X and Y is 18, variance of X and Y are 16 and 81 respectively, what will be the correlation coefficient between them?
   a. 1   b. -1   c. 0.5   d. 0.4

10. In binomial distribution if n=40 and p=0.5, what will be the standard deviation?
    a. 20   b. 10   c. 3.16   d. 4.47

MATHEMATICS [25] MARKS

Choose the correct answer

1. *The maximum value of* $sinx + cosx$ *is*
   a. 1   b. $\sqrt{2}$ c. $\frac{1}{2}$ d. 2

2. If *If* $a = 2, b = \sqrt{6}, A = 45^0,$ *then the value of angle C in* ΔABC *is*
   a. 75^0 b. 60^0 c. 45^0 d. 120^0

3. *Value of* $Sin\left(2Cos^{-1}\frac{1}{2}\right) =$
   a. $\frac{1}{2}$ b. 1   c. -1 d. $\sqrt{\frac{3}{2}}$

4. *The solution of* $|3x + 2| \leq$ *is*
   a. $-1 < x < -\frac{1}{3}$ b. $-1 \leq x \leq -\frac{1}{3}$ c. $-1 \leq x \leq -\frac{1}{3}$ d. $-\frac{1}{3} \leq x \leq \frac{1}{3}$

5. *If A and B are disjoint sets, then* $B \cap A$ *Compliment* $=$
   a. BUA b. $B - A$ c. $A - B$ d. B

6. *Let* $f: IR \to IR$ *defined by* $f(x) = 4x + 5,$ *then* $f^{-1}(1) =$
   a. 5   b. 1   c. -4 d. 2

7. *If* $log_3(2x + 7) - log_3 x = 2,$ *then the value of* $x =$
   a. 1   b. 2   c. 0   d. $\frac{7}{2}$

8. *If* $\begin{pmatrix} x - y & x + y \\ y & x \end{pmatrix}$ *is an upper triangular matrix whose determinant is 4 then the value of x is*
   a. ± 1 b. ± 3 c. ± 2 d. 0

9. *The system of equation* $Kx - 2y = 0 , x + 3y = 0,$ *has a unique solution, then*
   a. $K \neq \frac{-2}{3}$ b. $K = \frac{-2}{3}$ c. $K \neq \frac{-3}{2}$ d. $K = \frac{-3}{2}$

10. *The value of* $2 \times 2^{\frac{1}{2}} \times 2^{\frac{1}{4}} \times \dots \dots \dots \infty$ *is*
    a. $\frac{1}{2}$ b. ∞ c. -1 d. 2

11. *The value of* $(1 - w + w^2)^4 . (1 + w - w^2)^4 =$
    a. 256   b. 128   c. 512   d. 64

12. *If* $(3 + 2i)(x - iy) = 3 - 2i,$ *then the value of* $x^2 + y^2 =$
    a. $\frac{2}{13}$ b. 1   c. $\frac{1}{10}$ d. $\frac{2}{7}$

13. *If roots of* $px^2 + qx + r = 0$ *are in the ratio* $3:4,$ *then*
    a. $12p^2 = 49qr$ b. $4p^2 = 9rq$ c. $12q^2 = 49pr$ d. none

14. *The value of p for which* $(x - 1)$ *is the factor of* $x^3 + (p + 1)^2 x^2 - 10$ *is*
    a. $4, -2$ b. $2,3$ c. $1, -2$ d. $-4,2$

15. *The value of* $\lim_{x \to 0} \left(\frac{e^{Sin\ X}}{x} \right)^n =$
    a. e b. 0 c. 1 d. $\frac{1}{e}$

16. *If* $y = \sqrt{x + \sqrt{x + \sqrt{x + \cdots + \infty}}}$, *then* $\frac{dy}{dx}$ *is*
    a. $\frac{1}{2y-1}$ b. 1 c. $\frac{1}{xy}$ d. $\frac{1}{2y-x}$

17. $\int_0^{\frac{1}{\sqrt{2}}} \frac{dx}{\sqrt{1-x^2}} =$
    a. $\frac{\pi}{2}$ b. $\frac{\pi}{4}$ c. $\frac{\pi}{3}$ d. $\frac{\pi}{6}$

18. *The curve* $f(x) = x^3 + 6x^2 + 9x + 8$ *is strictly increasing in*
    a. $(-\infty, 1)$ b. $(1,3)$ c. $(3, \infty)$ d. $(-\infty, 1) \cup (3, \infty)$

19. *The curve* $f(x) = x^4 - 2x^3 + 5$ *is concave upward for*
    a. $x > 1$ b. $x < 1$ c. $x > 1\ or\ x < 0$ d. $x > 0$

20. *The area bounded by the curve* $y = x(1 - x)^2$ *and* $X - axis$ *is*
    a. $\frac{1}{12}$ b. $\frac{1}{6}$ c. $\frac{3}{4}$ d. $\frac{5}{7}$

21. *If the line* $2x + 3y + K =$
    0 *form a triangle with the coordinate axes whose area is* 27 *square unit, then the value of* $K =$
    a. 24 b. 12 c. 15 d. 18

22. *The distance between parallel lines* $y = 2x + 4$ *and* $6x - 3y = 5$ *is*
    a. $\frac{15}{\sqrt{2}}$ b. $\frac{17}{\sqrt{45}}$ c. $\frac{1}{\sqrt{2}}$ d. $\frac{10\sqrt{5}}{4}$

23. *If the sum of slopes of lines* $x^2 + Kxy - 3y^2 = 0$ *is twice the product of slopes then* $K =$
    a. 1 b. 2 c. 0 d. -2

24. *The value of K for which the* $eq^n. 2x^2 - 7xy + 3y^2 + 5x - 5y + K =$
    0 *represents a pair of staight line is*
    a. $K = 4$ b. $K = -3$ c. $K = 2$ d. $K = 6$

25. *The length of tangent from* $(5,1)$ *to the circle* $x^2 + y^2 + 6x - 4y - 3 = 0$ *is*
    a. 81 b. 29 c. 21 d. 7

ENGLISH PART III [10] MARKS: READING COMPREHENSION

It is worth saying something about the social position of beggars, for when one has consorted with them, and found that they are ordinary human beings, one cannot help being struck by the curious attitude that society takes towards them. People seem to feel that there is some essential difference between beggars and ordinary "working" men. They are a race apart--outcasts, like criminals and prostitutes. Working men "work," beggars do not "work"; they are parasites, worthless in their very nature. It is taken for granted that a beggar does not "earn" his living, as a bricklayer or a literary critic "earns" his. He is a mere social excrescence, tolerated because we live in a humane age, but essentially despicable.

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   e. Like people following any profession, they too are inseparable part of the society
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   b. beggars are insects   b. They cannot be found in nature
   d. beggars, they depend on others to survive   d. all a, b and c

3. What is the antonym of chronic?
   c. constant   b. never-ending   c. persistent   d. Intermittent

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   d. does not work   b. by asking for money   c. by begging for food   d. by singing

5. What does consorted mean in the context of the above passage?
   b. associated   b. worked with   c. befriended   d. hated

6. What does excrescence mean in the context of the above passage?
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   d. sadness

ENGLISH PART IV [15] MARKS: WRITING [MAXIMUM 500 WORDS]

C. You learn the most important lessons in life through experience not study. Do you agree or disagree with the above statement? Write an essay arguing your position.

[OR]

D. Your best friend is confused about whether or not to leave her/his hometown to come to Kathmandu for further studies. What would you advise her/him? Write an email to convince her/him of your belief.

CHEMISTRY [10] MARKS

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11. An alkyl halide can be converted into alcohol by
    b. Addition   b. Elimination   c. Substitution   d. Dehydrogenation

12. An isonitrile on reduction gives
    b. 3° amine   b. 2° amine   c. 1° amine   d. None

IQ & GK [15] MARKS

1. Letter G in the name Google is always in which color?
   a. Red   b. Green   c. Blue   d. Yellow

2. Apple founder Steve Jobs died because of
   a. Heart-Attack   b. Pancreatic Cancer   c. Accident   d. Has not died yet

3. If 2+2 = 6 and 3+3 = 12, and 4+4 = 20 what is 5+5?
   b. 20   b. 25   c. 30   d. 35

4. The square root of 784 is
   a. 85   b. 22   c. 28   d. 24

5. Name the three base colors
   a. RGY   b. RBY   c. RGB   d. BWY

6. When the digital clock strikes 3:30 the angle created between the hour hand and minute hand is
   a. 30 degrees   b. 45 degrees   c. none   d. 90 degrees

7. Name the first name of the recent prime-minister of India to visit Nepal
   a. Upendra   b. Narendra   c. Surendra   d. Rabindra

8. If Bob sold 15 apples in a working week, what is the average number of apples he sells each day?
   a. 2   b. 3   c. 4   d. 5

9. "Pig is to pork" as "Cow is to _____":
   a. Lamb   b. Beef   c. Stew   d. Cattle

10. The day after the day after tomorrow is four days before Monday. What day is it today?
    a. Monday   b. Tuesday   c. Wednesday   d. Thursday

11. Which of the following can be arranged into a 5-letter English word?
    a. ABCDE   b. R I L S A   c. T O O M T   d. W Q R G S

12. The number of characters in Haribansha Acharya's name when spelt in Nepali & English is always same?
    a. True   b. Always True   c. Sometimes True   d. Never True

13. Russia is to Ukraine right now. What is Palestine to?
    a. USA   b. Iran   c. Syria   d. Israel

14. Find the odd one out:
    a. Kirtipur   b. Bhaktapur   c. Lalitpur   d. Chitwan

15. Rearrange the following letters to make a word and choose the category in which [Leekward].
    a. City   b. Actor   c. Vegetable   d. College