DEERWALK INSTITUTE OF TECHNOLOGY
School of Computer Science and Information Technology
APTITUDE TEST QUESTIONS

Please read questions carefully before answering. In total there are 6 sections. They are as follows

SUBJECT	PARTS	TOTAL MARKS	SUGGESTED TIME (MINS)
ENGLISH	4	35	55
CHEMISTRY	1	15	20
PHYSICS	1	15	20
MATHEMATICS	1	15	20
STATISTICS	1	10	15
IQ **BONUS ***	1	15	20

BONUS scores will only be counted if all of the sections have been completed.

ENGLISH PART 1 [5] MARKS

Complete the sentence.

1. She …….. reading for two hours when her husband arrived home.
   a. was b. has been c. had been d. were
2. Every boy and every girl ……equal rights.
   a. need b. needs c. needing d. already needed
3. Unless you are careful, you ……..the test.
   a. fail b. fails c. will fail d. would fail
4. I know Jack will get Rama …… his clothes.
   a. wash b. to wash c. washed d. washing
5. An M.D. is superior ……..his subordinates.
   a. than b.from c. to d. with

ENGLISH PART 2 [5] MARKS

Pick the coorect antonyms.

1. FASCIMILE
   a. original b. sincere c. replica d. false
2. CONSCIENTIOUS
   a. confine b. impulsive c. enrich d. subdue
3. PROSCRIBE
   a. reduce b. prohibit c. advance d. permit

Pick out the correct synonyms.

4. CHAGRIN
   a.green b. joys c. distress d.happiness
5. ACRIMONIOUS
   a. bitter b. soft c. understandable d. enjoying

ENGLISH – PART 3 [10] MARKS - READING COMPREHENSION

In the early 1920's, settlers came to Alaska looking for gold. They traveled by boat to the coastal towns of Seward and Knik, and from there by land into the gold fields. The trail they used to travel inland is known today as the Iditarod Trail, one of the National Historic Trails designated by the Congress of the United States. The Iditarod Trail quickly became a major thoroughfare in Alaska, as the mail and supplies were carried across this trail. People also used it to get from place to place, including the priests, ministers, and judges who had to travel between villages. In the winter, the settlers' only means of travel down this trail was via dog sled.

Once the gold rush ended, many gold-seekers went back to where they had come from, and suddenly there was much less travel on the Iditarod Trail. The introduction of the airplane in the late 1920's meant dog teams were no longer the standard mode of transportation, and of course with the airplane carrying the mail and supplies, there was less need for land travel in general. The final blow to

the use of the dog teams was the appearance of snowmobiles. By the mid 1960's, most Alaskans didn't even know the Iditarod Trail existed, or that dog teams had played a crucial role in Alaska's early settlements.

Dorothy G. Page, a self-made historian, recognized how few people knew about the former use of sled dogs as working animals and about the Iditarod Trail's role in Alaska's colorful history. To raise awareness about this aspect of Alaskan history, she came up with the idea to have a dog sled race over the Iditarod Trail. She presented her idea to an enthusiastic musher, as dog sled drivers are known, named Joe Redington, Sr. Soon the Pages and the Redingtons were working together to promote the idea of the Iditarod race.

Many people worked to make the first Iditarod Trail Sled Dog Race a reality in 1967. The Aurora Dog Mushers Club, along with men from the Adult Camp in Sutton, helped clear years of overgrowth from the first nine miles of the Iditarod Trail. To raise interest in the race, a $25,000 purse was offered, with Joe Redington donating one acre of his land to help raise the funds. The short race, approximately 27 miles long, was put on a second time in 1969.

After these first two successful races, the goal was to lengthen the race a little further to the ghost town of Iditarod by 1973. However in 1972, the U.S. Army reopened the trail as a winter exercise, and so in 1973, the decision was made to take the race all the way to the city of Nome—over 1,000 miles. There were many who believed it could not be done and that it was crazy to send a bunch of mushers out into the vast, uninhabited Alaskan wilderness. But the race went! 22 mushers finished that year, and to date over 400 people have completed it.

Select the most appropriate answer

1. The primary purpose of this passage is to
    a. recount the history of the Iditarod trail and the race that memorializes it
    b. describe the obstacles involved in founding the Iditarod race
    c. outline the circumstances that led to the establishment of the Iditarod Trail
    d. reestablish the important place of the Iditarod Trail in Alaska's history

2. Based on information in the passage, it can be inferred that all of the following contributed to the disuse of the Iditarod Trail except:
    a. more modern forms of transportation
    b. depleted gold mines
    c. highway routes to ghost towns
    d. reduced demand for land travel

3. As used in paragraph 2, which is the best definition for mode?
    a. formula
    b. way
    c. preference
    d. option

4. According to the passage, the initial Iditarod race
    a. was funded through the sale of musher entrance fees
    b. was founded by an advocate for Alaskan history
    c. ended at the ghost town of Iditarod
    d. boasted a total of 400 entrants

5. As used in paragraph 3, the phrase "self-made historian" implies that Dorothy G. Page
    a. was employed by the state to keep its dog sled history alive
    b. was determined to honor the glories of the gold rush in spite of her questionable credentials
    c. had pursued the study of Alaska's history out of her own interest
    d. had personally educated others about Alaska's history

ENGLISH – PART 4 PERSONAL STATEMENT – [15] MARKS

Please select one of the two. Write in a separate paper provided. DO NOT WRITE YOUR NAME ON THE ANSWER SHEET – ONLY YOUR ROLL NUMBER. Write neatly. Essay should not be more than 2 pages. The essay will not just be checked on pure content but on composition, flow, grammar, and vocabulary.

1. The reason you are here now is that you have decided to pursue your Bachelors (Computer Science from DWIT. Describe an event, or series of events that made you take up this decision. What challenges do you think you will be faced with and how do you think you will tackle those challenges?
2. What is the biggest accomplishment you have made so far in your life thus far? What makes it so special? What was the most satisfying feeling about it all? Was it the difficulty of task, achieveing what you thought was impossible, having done something no one had done ever before or combination of it all? Do you feel that it helped you become a better person?

CHEMISTRY [15] MARKS

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1. What will be the mass of 6.023 X 1023 molecules of carbon dioxide?
   a. 17.01g b.16.00g c.44 g d. 56.20g
2. What is aqua regia
   a. 3HCL + HNO3 b. HCL + 3HNO3 c. H3PO4 + H2SO4 d. HCL + $CH_3\,COOH$
3. Which of the following compounds are used as refrigerant?
   a. CH_3COCH_3 b. CCl_4 c. CF_4 d. CCl_2F_2
4. The shortest bond length is in
   a. Ethylene b. Benzene c. Ethane d.Acetylene
5. Aniline reacts with diazonium salt to form
   a. Diazonium benzene b. Hydrazonium benzene c. Azobenzene d. Azoxybenzene
6. The heat of neutralization is heighest in
   a. NaOH+CH3COOH b.HCl+NaOH c.NH4OH+HCl d.CH3COOH+NH4OH
7. The formula of blue vitriol is is:
   a.CuSO4.5H2O b.CuSO4. c. CuSO4.H2O d. CuSO4.7H2O
8. What is the pH of 0.1M sulphuric acid
   a. 1 b. 2 c. 1.5 d. none
9. FeSO4.7H2O is also known as:
   a. Blue vitriol b. Malachite c. Calomel d. Green vitriol
10. The product of the reaction: CH3Cl+AgCN→ is
    a. CH3CN b. CH3COOH c.CH3CONH2 d. CH3NC
11. How many moles of Hydrogen atom are present in 180g of water?
    a. 1 b.16 c. 18 d. 100
12. Permanent hardness of water may be caused by:
    a. Calcium chloride b. Magnesium chloride c. Calcium sulphate and magnesium sulphate
    d. All of the above
13. When alcohols are heated with sodium metal then treated with alkyl halides, to give:
    a. Alkene b. Ether c. Aldehyde d. Alcohol
14. The C-C-C bond angle in benzene is
    a.128° b.120° c.134° d.180°
15. How many grams of calcium are present in 250 g of calcium carbonate?
    a. 160g b. 100g c. 170g d. 120g

MATHS [25] MARKS

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1. The value of $Cos^2\theta + Sec^2\theta$ is always
   a. ≥1 b. ≥2 c. ≤2 d. ≤1
2. $|x| < a$ implies
   a. $-a < x < a$ b. $-a > x > a$ c. $-a \geq x \geq a$ d. $-a \leq x \leq a$
3. If one root of $ax^2+bx+c = 0$ is $\frac{1}{2+3i}$, then other root is
   a. $\frac{1}{2-3i}$ b. 2-3i c. $\frac{2+3i}{13}$ d. $\frac{2-3i}{13}$
4. $\lim_{x\to 0} \frac{1-Cos3x}{1-Cos\,4x} =$

a. $\frac{9}{16}$ b. $\frac{6}{15}$ c. $\frac{16}{9}$ d. $\frac{3}{4}$

5. $\int_0^{1/\sqrt{2}} \frac{dx}{\sqrt{1-x^2}}$ =

a. $\frac{\pi}{2}$ b. $\frac{\pi}{4}$ c. $\frac{\pi}{3}$ d. $\frac{\pi}{6}$

6. The distance between parallel lines 3x+4y=9 and 6x+8y=15 is

a. $\frac{5}{7}$ b. $\frac{2}{5}$ c. $\frac{3}{10}$ d. $\frac{7}{10}$

7. The area bounded by the curves y=x^2 and y=2x is

a. $\frac{3}{4}$ b. $\frac{7}{3}$ c. $\frac{3}{7}$ d. $\frac{4}{3}$

8.If A and B are subsets of universal set U. Then $\overline{AUB}$=

a.$\overline{A}$ U $\overline{B}$ b. $\overline{A}$ ∩ $\overline{B}$ c.$\overline{A \cap B}$ d.A ∩ B

9.The domain of the function f (x)= $\frac{1}{1-x^2}$ is

a.IR b.$\{-1, 1\}$ c.$IR - \{1\}$ d.IR- $\{-1, 1\}$

10.If x, y, z are in G.P, then $logx, logy, log\ z$ are in

a.G. P b. H. P c.A. P d.None

11. Which one of the following is not true, if A and B are square matrices of same order:

a.$|A|$ =$|A^T|$ b.$|AB|$= = $|A||B|$ c.$|A|$ =$|A^{-1}|$ d.$|I|$=1

12. The area bounded by the curve y=sec^2x, x-axis and the line x=$\frac{\pi}{4}$ is

a. 1 b. $\frac{1}{2}$ c.2 d.$\frac{1}{4}$

a. If one root of $x^2 - 11x + a = 0$ and $x^2 - 14x + 2a = 0$ is common, then the value of a=

a.24, 1 b. 0, 24 c. 0, 12 d. 3, 12

a. If (3,3) lies on the line joining (h,0) and (0,k) then

a.h+k=9 b. hk=3 c. 3h-3k=1 d. $\frac{1}{h} + \frac{1}{k} = \frac{1}{3}$

a. If the poits (a,0) , (0, b) and (1, 1) are collinear then

a.a-b=1 b. a-b=0 c. a+b=ab d. a-b=ab

16. The angle between pair of lines $x^2 - 2xy\ cotQ - y^2 = 0$ is

a.$\frac{\pi}{4}$ b. $\frac{\pi}{2}$ c. $\frac{\pi}{3}$ d. $\frac{\pi}{6}$

17. The slope of tangent to the circle $x^2 + y^2$ at (2,2) is

a.1 b. 2 c. -1 d. 0

18. The line $y = mx + c$ touches the parabola $y^2 = 4ax$ if

a.$c = \frac{a}{m}$ b. $c = am$ c. $c < \frac{a}{m}$ d. $c > \frac{a}{m}$

20. The domain of F(x)= $\frac{1}{\sqrt{x^2-3x+2}}$ is

a.$(-\infty, 1)$ b.$(-\infty, 1) \cup (2, \infty)$ c.$(-\infty, 1) \cup (2, \infty)$ d. $(2, \infty)$

The value of $\log_{25} 125$=

a.$\frac{3}{2}$ b. $\frac{2}{3}$ c. $\frac{1}{2}$ d. $\frac{1}{3}$

21. If F(x)= $x^2 - 2x - 5$ and A= $\begin{bmatrix} 1 & 2 \\ 3 & 1 \end{bmatrix}$, then f(A)=

a.$\begin{bmatrix} 0 & -4 \\ 8 & 8 \end{bmatrix}$ b. $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ c. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ d. $\begin{bmatrix} 2 & 1 \\ 2 & 0 \end{bmatrix}$

22. The Maximum and minimum values of Sin^{4}x+Cos^{4}x are:

a. 2,1 b. 3, $\frac{1}{2}$ c. 4,3 d. 1, $\frac{1}{2}$

23. If a=2 , b=$\sqrt{6}$, A=45°. Then value of angle b in ΔABC is

a. 75° b. 60° c. 45° d. 120°

24. The Principal value of Sin^{-1}(Sin $7\frac{\pi}{6}$)=

a. $-\frac{\pi}{6}$ b. $\frac{\pi}{6}$ c. $\frac{\pi}{3}$ d. $\frac{7\pi}{6}$

25. If Sec^{-1} = Cosec^{-1}y , then the value of $\frac{1}{x2} + \frac{1}{y2}$ =

a. -1 b. 0 c. 1 d. 1/2

PHYSICS [25] MARKS

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1. Value of acceleration due to gravity at the center of the earth is approximately
   a. 9.8 m/s^2 b. 0 m/s^2 c. -9.8 m/s^2 d. 4.8 m/s^2
2. Focal length of equiconvex lens of glass (refractive index =1.5) of radii of curvature 10cm is
   a. 10cm b. -10cm c. 20cm d. -20cm
3. For four segments of given copper wire of same thickness the resistance of
   a. longer wire is greater b. shorter wire is greater c. shorter wire is lesser d. wire does not depend on length and thickness
4. Charge of a photon is
   a. 0 b. e c. -e d. 2e
5. Refractive index of diamond (n_d=2.5) with respect to water (n_w=1.33) is
   a. 1.879 b. 1.400 c. 0.900 d. 1.666
6. 77^0 F is same as
   a. 30^0 C b. 77^0 C c. 25^0 C d. 35^{0}C
7. Dispersion takes place when white light is incident on a prism because
   a. white light is the mixture of seven different wavelength
   b. refractive index of the prism is independent of the wavelength of light
   c. refractive index of the prism depends on the speed of incident light
   d. deviation is independent of refractive index of the prism
8. SI unit of electric field is
   a. Gauss b. weber/m^2 c. volt/m d. Newton/ m^2
9. If an object is fired with 30 m/s from the ground making an angle 30^0 with horizontal. The vertical component of velocity at the highest point of its trajectory is approximately
   a. 15 m/s b. 0 m/s c. 26 m/s d. -15 m/s
10. The velocity of a particle executing under S.H.M. becomes minimum
    a. just ahead of mean position
    b. just ahead of extreme position
    c. at the mean position
    d. at the extreme position
11. At the boiling point of water supplied heat is used up
    a. to raise the temperature of water
    b. to convert water into steam
    c. to raise the temperature of water and then to convert water into steam
    d. d. to raise the temperature of steam
12. Kinetic of energy of an ideal gas is
    a. directly proportional to the absolute temperature of gas
    b. directly proportional to the square root of the absolute temperature of gas
    c. inversely proportional to the absolute temperature of gas
    d. directly proportional to the square of the absolute temperature of gas
13. Acceleration of an object moving under terminal velocity is
    a. 0 b. –g c. g d. 2g
14. Electron-Volt is the unit of
    a. potential difference b. electric field c.electric charge d. energy
15. The work is defined as
    a. product of mass and linear velocity
    b. product of force and time
    c. scalar product of force and displacement
    d. d. vector product of force and displacement

STATISTICS [10] MARKS

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1. What is suitable measure of average for qualitative data?
   a.HM b.Median c.Mode d.AM
2. What is the probability that an English alphabet selected at random is a vowel?

a.21/26 b.15/26 c.5/26 d.3/26

3. 30.What is total number of selection of n objects taken r at a time?
   a. $\frac{n!}{(n-r)!}$ b. $\frac{n!}{r!(n-r)!}$ c. $\frac{n!}{r!}$ d.(n-1)!
4. 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
5. 60.What is SD of 2,4,6 and 8?
   a.$\sqrt{5}$ b. 5 c. 2 d.4
6. Find the probability of getting 2 heads on 5 tosses of a coin?
   a.5/32 b. 5/16 c.3/8 d.3/16
7. What value can be obtained by drawing perpendicular from point of intersection of less than ogive and more than ogive to the x axis?
   a.mean b. median c.mode d.range
8. 21.Which of the following is independent of change of origin and scale?
   a.central tendency b. dispersion c.skewness d. correlation
9. 31.What is the range of probability?
   a.0<p<1 b. 0≤p<1 c. 0<p≤1 d. 0≤p≤1
10. What is mode? (chapter 2)
   a.middle value b. lowest value c. highest value d. most repeated value

IQ TEST [15] MARKS

If you count from 1 to 100, how many 7's will you pass on the way?
   a. 14 b.22 c.18 d.20

2. If it were two hours later, it would be half as long until midnight as it would be if it were an hour later. What time is it now?
   a.6.00 PM b.9:00PM c.10:00 PM d. 7:30PM

3. Fill in the missing number: 0,1,1,2,3,5,8,13,….,34,55
   a.15 b.16 c.21 d.28

4.What is the number that is one half of one quarter of one tenth of 400?
   a.5 b.20 c.10 d.40

5.Which vowel comes midway between J and T?
   a.L b.M c.O d.L

6.Continue the following number series with the group of numbers below which best continues the series?
1 10 3 9 5 8 7 7 9 6 (…)
   a.13 b.4 c.8 d.11

7. Which same three-letter word can be placed in front of the following words to make a new word?
SIGN, DONE, DUCT, FOUND, FIRM, TRACT, DENSE
   a. UN b. In c. CON d.RE

8. Sally likes 225 but not 224; she likes 900 but not 800; she likes 144 but not 145. Which does she like?
   a. 1600 b. 1700 c. 1800 d. 1900

9. Which number comes next in this series of numbers? **2 3 5 7 11 13 ?**
   a. 14 b. 15 c. 16 d. 17

10. Which letter comes next in this series of letters?B A C B D C E D F **?**
   a. B b. C c. D d.E

11. The same word can be added to the end of GRASS and the beginning of SCAPE to form two other English words. What is the word?
   a.VIEW b.POT c.GARDEN d.LAND

12. STEVE JOBS is associated with
   a. APPLE b. WINDOWS c. MICROSOFT d. MOVIES

13. Which of the following words does not belong in the list, and why?
   a. Reappear b.Caucasus c.Inefficiencies d.Signings

14. MB in terms of computer memory stands for ?
   a. main byte b.mega byte c.mini bytes d.main brain

15. If Arun had three apples and gave two to Ram, how many apples will Shyam end up with?
   a.0 b.1 c.-1 d. Can not say

ALL THE BEST.