

အဆင့်မြင့်ပညာဌီးစီးဌာန
 ကွန်ပျူးတာတူလှသိုလ်
 ပထမနှစ် B.C.Sc/B.C.Tech
 ပထမနှစ်ဝက်စာမေးပွဲ
 မြန်မာစာ
 ၉၅-၄

မေးခွန်းအားလုံးဖြေဆိုပါ။

ခွင့်ပြုချိန်(၃)နာရီ

၁။ (က) နှစ်သက်ရာ နှစ်ခု ကိုဖြေဆိုပါ။
 ချည်းသံ၊ အကူစကားလုံး၊ ဝိဘတ်သွယ်ပုဒ်
 (ခ) အကွားရာစဉ်ပါ။

နှင်းဆီ၊ စပယ်၊ သော်က၊ ခရော ပုန်းညက်၊ နီဇာ၊ ခတ္တာ၊ သဇ်၊ ခွါည့်၊ စွန်းပန်း၊ ကုံကော်၊
 ကသစ်၊ သပြေ၊ သရုပါ၊ ယင်းမာ၊ အင်္ကာင်းသစ်ခွာ၊ ပိတောက်၊ ချယ်ရီးနှင်းပန်း၊ ။

၂။ နှစ်သက်ရာ တစ်ပုဒ် ကိုဖြေဆိုပါ။

(က) “လမ်းဖောက်ခြင်း” စကားပြေ မှ စာဆို ၏အတွေးအမြင်ကိုလေ့လာတင်ပြပါ။
 (ခ) “မူသိကန္တုစိန်ဖော်” စကားပြေ မှ တပည့်ဆိုး နှင့် တပည့်ကောင်းတို့၏စရိတ်
 လက္ခဏာ များကိုလေ့လာတင်ပြပါ။

၃။ နှစ်သက်ရာ တစ်ပုဒ် ကို ဆွဲးနွဲးတင်ပြပါ။

(က) “ဂုဏ်သာရု” ကဗျာသည် လေးနက်သောအနှစ်သာရု ဟူသည့်အဆိုနှင့် လိုက်စက် ညီမှု
 ရှိကြောင်းကိုပြည့်စုစွာရှင်းပြပါ။
 (ခ) “ဆီမလူးတဲ့ပေဖူးလွှာ” ကဗျာမှ စာဆို တင်ပြလိုသော ဘတီသွေးဘတီမာန်ကို
 ပေါ်လွင်အောင်ရေးပါ။

၄။ နှစ်သက်ရာ တစ်ပုဒ် ၏ အရေးအဖွဲ့ကို စီကုံးတင်ပြပါ။

(က) “ပြည်ထောင်စုကလေးတူလှသိုလ်” စကားပြေ အရေးအသား
 (ခ) “တံခွန်တိုင်သိကြားထင့်” တေးထပ်ကဗျာမှ စာဆိုးပုည်၏ ကဗျာညာဏ်ရည်

၅။ နှစ်သက်ရာ တစ်ပုဒ် ကိုစီကုံးတင်ပြပါ။

(က) အမိုး၊ အမိုးသားစိတ်ခာတ်မှ မျိုးချစ်စိတ်ခာတ်သို့
 (ခ) မြန်မာရီးရာ ရာသိပွဲတော်များ

DEPARTMENT OF HIGHER EDUCATION
UNIVERSITY OF COMPUTER STUDIES

FIRST YEAR

MIDTERM EXAMINATION

MARCH, 2017

ENGLISH

ZONE IV

Answer All Questions.

Time Allowed: 3 Hours

I. Read the passages and answer the following questions.

(20 Marks)

How Children Learn

The way in which children learn is an ever-growing area of study. It is obvious that children differ from adults in many ways, but what is interesting is that there are quite a number of commonalities across learners of all ages. A study of young children fulfils two purposes: it helps to highlight the strengths and weaknesses of the learners who populate a nation's schools, and it offers a window into the development of learning that cannot be seen if one considers only well-established learning patterns and expertise. When an observer studies the development of children over time, a dynamic picture of learning unfolds. An understanding of infant thinking mental processes or cognition and how young children from 2 to 5 years old add information to their knowledge 'data base' helps child psychologists to better equip students for their transition into formal school settings.

For much of the 20th century, most psychologists accepted the traditional thesis that a newborn's mind is a *tabula rasa* or blank slate upon which the record of experience is gradually impressed. It was further thought that verbal communication was a prerequisite for abstract thought and so, in its absence, a baby could not have comprehension. Since babies are born with a limited range of behaviours and spend most of their early months asleep, they certainly appear passive and unknowing. Therefore, it was commonly thought that infants lack the ability to form complex ideas. Until recently, there was no obvious way for them to demonstrate anything to the contrary to researchers.

In time however, challenges to this view arose. It became clear that with carefully designed scientific procedures, psychologists could find ways to pose rather complex questions about how much infants and young children know and what they are capable of doing. Psychologists began to employ new methodologies and began to gather a substantial amount of data about the remarkable abilities that young children possess. Their research stood in great contrast to the older emphases which focussed almost entirely on what children lacked. The mind of young children came to life through this research, it became clear that very young children are both competent and active when it comes to their conceptual development.

A major move away from the earlier *tabula rasa* view of the infant mind was taken by the Swiss psychologist Jean Piaget. Beginning in the 1920s, Piaget argued that the young human mind could best be described in terms of complex cognitive or 'thinking' structures. From close observations of infants and careful questioning of children, he concluded that the development of the mind proceeds through certain stages, each involving radically different thinking processes. Piaget observed that infants actually seek stimulation from their surroundings thus promoting their intellectual development. He showed that their initial representations of such things as space and time as well as awareness of objects and self are constructed only gradually during the first 2 years. He concluded that understanding in young infants is built up through the gradual coordination of sight, sound and touch.

After Piaget, perceptual learning theorists studied how newborns begin to integrate sight and sound and explore their surroundings. They saw that learning in infants proceeded rapidly when they were given the opportunity to explore the objects and events they encountered. Theories were developed which attempted to describe how the brain processes information. It was around this time that the metaphor of the mind as computer came into wide usage.

In order to study what babies know and can learn about readily, researchers needed to develop techniques of 'asking' infants what they know. Because infants are so limited physically and verbally, experimenters interested in finding out how babies think had to find methods suitable to an infant's motor capabilities. New ways were developed for measuring what infants prefer to look at and detecting changes in events to which they are sensitive. Three such methods that were used were sucking, habituation, and visual expectation.

Although theories put forward during this time differed in many ways, they shared an emphasis on considering children as active learners, those who actually assemble and organise information. Therefore, primarily cognitive development involves the acquisition of organised knowledge such as, an early understanding of basic physics, some biological concepts and early number sense. In addition, cognitive development involves gradually learning strategies for solving problems, understanding and remembering.

The active role of learners was also emphasized by Vygotsky, who focused on the role of social support in learning. According to Vygotsky, all cognitive skills and patterns of thinking are not primarily determined by the skills people are born with; they are the products of the activities practiced in the social environment in which the individual grows up. From Vygotsky's research into the role of the social environment in the development of thinking came what he called a zone of proximal development. This zone which refers to tasks learners can do with the assistance of others, had a big impact upon developmental psychology. This line of work has drawn attention to the roles of parents, and teachers in challenging and extending children's efforts to understand. It has also contributed to an understanding of the relationship between formal and informal teaching as well as learning situations and cognition.

Question 1-10

Do the following statements agree with the information given in Reading Passage ? On your answer sheet write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1. In many ways, children learn the same way adults learn.
2. 20th century psychologists thought infants were unintelligent because they were usually asleep.
3. The focuses of early research methods in child development have been similar to those conducted more recently.
4. Piaget showed that each new stage of learning builds upon the previous one.
5. Vygotsky's research has had a positive impact upon many primary school teachers.

Question 6-10

Complete the sentences below with words taken from Reading Passage . Use NO MORE THAN TWO WORDS for each answer.

6. When it comes to learning new concepts, recent research has shown that children are both competent and _____.
7. Not only are young children capable of assembling information they are also able to _____.
8. One of the ways scientists measured infant preference was through _____.
9. An indicator of cognitive development is that knowledge must be _____.
10. Vygotsky believed that the key to learning lay in the individual's _____.

II. Fill in each numbered blank with a word from the list given.

(10 Marks)

Write down only the number of the blank and the word that fills it.

influential	Finally	Then	called	in
First	of	what	which	when
execute	or	peripherals	and	and
attached	are	coordinate	memory	an

A computer is 1..... electronic machine 2..... can accept data in a certain form, process the data, 3..... give the results of the processing 4..... a specified format as information.

5....., data is fed into the computer's memory. 6....., 7..... the program is run, the computer performs a set of instructions 8..... processes the data. 9....., we can see the results (the output) on the screen 10..... in printed form.

A computer system consists 11..... two parts: hardware and software. **Hardware** is any electronic or mechanical part you can see or touch. **Software** is a set of instructions, 12..... a program, which tells the computer 13..... to do.

There are three basic hardware sections: the **central processing unit (CPU)**, main 14..... and 15.....

Perhaps the most 16..... component is the central processing unit. Its function is to 17..... program instructions and 18..... the activities of all the other units. In a way, it is the brain of the computer.

The main memory (a collection of RAM chips) holds the instructions and data which 19..... being processed by the CPU. Peripherals are the physical units 20..... to the computer. They include storage devices and input/ output devices.

III. (A) Put the verbs in brackets into the *simple present* or the *present continuous tense*.

(5 Marks)

1. An alcoholic is a person who (drink) too much and can't stop.
2. Look! She (wear) the same shoes as me.
3. Nobody (get) up early for fun.
4. What you (do) with my coat ?
5. Many passenger planes (not /fly) faster than sound.

(B) Make questions from these statements.

(5 Marks)

1. They play football. What.....?
2. She went to office by car. How.....?
3. He is learning English. What.....?
4. You have lived in Hong Kong for five years. Where.....?
5. We should look down at the monitor, not up. Should?

(C) Choose the correct verbs in brackets.

(5 Marks)

1. One of my brothers (like / likes) smart phones.
2. Some of the students in our school (is / are) late for class.
3. Everyone (watch / watches) television at night.
4. None of the members (has /have) a house to stay.
5. Most people in modern society (use / uses) internet.

III. (D) Complete the gaps using an appropriate article.

(5 Marks)

My aunt lived on the ground floor of 1..... old house on 2..... River Thames. She was very much afraid of burglars and always locked up 3..... house very carefully before she went to bed. She also took the precaution of looking under 4..... bed to see if 5..... burglar was hiding there.

III. (E) Complete these sentences with the word in brackets and one of these noun suffixes: -tion, -er, -ing, -ion, -ness.

(5 Marks)

1. Kodak is a (manufacture)..... of photographic and imaging equipment.
2. To avoid red eyes, use the camera's red eye (reduce)..... feature.
3. (Crop)..... a photograph means cutting out the parts of an image you don't need.
4. The (sharp)..... of a photograph is a combination of resolution and acutance- the ability to represent clear edges.
5. Speech (recognize)..... software lets you operate computers by voice command.

III. (F) Complete this text about the mouse with verbs from the list.

(5 Marks)

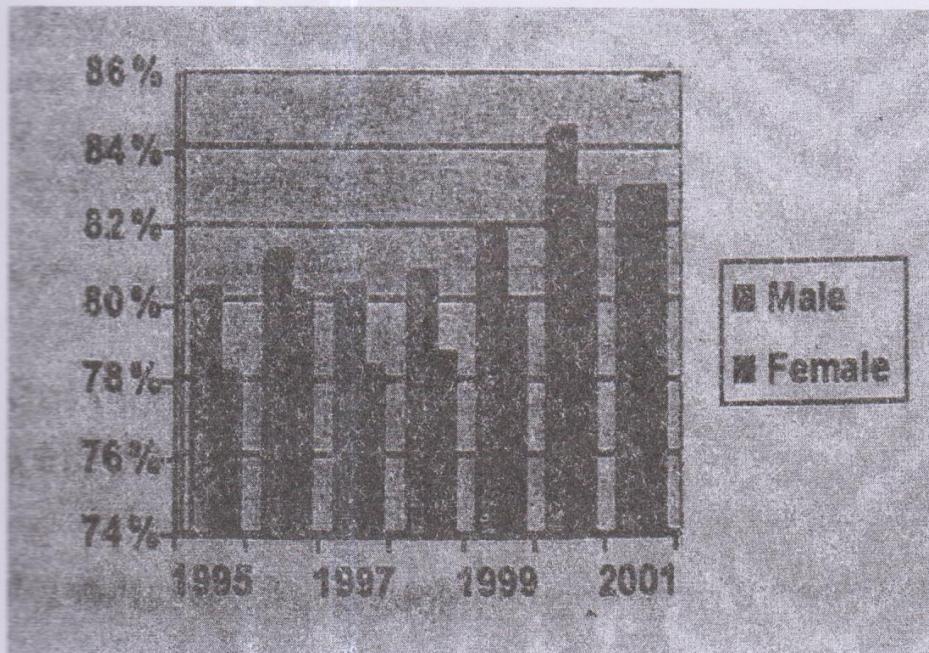
click double click drag grab select move control

A mouse allows you to (1)..... the cursor and move around the screen very quickly. Making the same movements with the arrow keys on the keyboard would take much longer. As you (2)..... the mouse on your desk, the pointer on the screen moves in the same direction. The pointer usually looks like an l-bar, an arrow, or a pointing hand, depending on what you are doing. A mouse has one or more buttons to communicate with the computer. For example, if you want to place the insertion point or choose a menu option, you just(3).....(press and release) on the mouse button, and the option is chosen. The mouse is also used to (4)text and items on the screen. You can highlight text to be deleted, copied or edited in some way.

The mouse is widely used in graphics and design. When you want to move an image, you position the pointer on the object you want to move, press the mouse button, and (5)..... the image to a new location on the screen.

IV.(A) The bar chart below shows the percentage of Australian graduates in full-time employment four months after graduating, between 1995 and 2001.

Write a report for a university lecturer describing the information. (10 Marks)



IV.(B) Describe a typical dish from your country that you would like to give a visitor from another country. (10 Marks)

You should write:

- What it is made from
- When it is eaten (every day or on a special occasion)
- Why this dish is popular
- And also say whether you like or dislike this dish.

Present a written argument or case to an educated reader with no specialist knowledge of the following topic. (20 Marks)

There is an excessive number of cars on our roads today and this leads to many problems. Individuals and governments should ensure that public transport plays a more important role in modern life in order to tackle these problems.

To what extent do you agree with this statement?

Department of Higher Education

University of Computer Studies

First Year (B.C.Sc./B.C.Tech.)

Mid-Term Examination

PHYSICS

March, 2017

Answer all questions.

Zone IV

Time allowed : 3 hours

- 1.(a) State **Newton's laws of motion**. Find the net force on the airplane if the forces are weight 16.0 kN, down ward; lift 15.5 kN, upward; thrust 1.2 kN north; drag 1.2 kN south.

(10 marks)

- (b) What is the *Average velocity* and *Average Acceleration*?

In figure 1(b); two blocks are connected by a massless, flexible cord that does not stretch; the cord passes over a massless, frictionless pulley. If the masses are $m_1=26.0\text{kg}$ and $m_2=42.0\text{kg}$, what are the accelerations of each block and the tension in the cord? The gravitational field strength is 9.80 N/kg.

(10 marks)

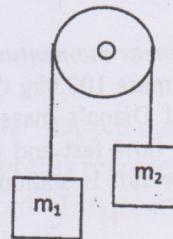


Figure 1(b)

- 2.(a) Define the terms *projectile* and *angle of elevation*? A ball is thrown from a point 1m above the ground. The initial velocity is 19.6m/s at an angle of 30° above the horizontal. (i)Find the maximum height of the ball above the ground. (ii) What is the speed of the ball at the highest point?

(10 marks)

- (b) A C & C 30 sailboat is sailing at 12.0 knots heading directly each across the harbor. When a gust of wind comes up, the boat changes its heading to 11.0° north of east and its speed increases to 14.0 knots. What is the magnitude and direction of the change in velocity of the sailboat?

(10 marks)

- 3.(a) Define the terms; *centripetal acceleration*.

A potter's wheel rotates from rest to 210rpm in a time of 0.75s. (a) What is the angular acceleration of the wheel during this time, assuming constant angular acceleration? (b) How many revolutions does the wheel make during this time interval? (c) Find the tangential and centripetal components of the acceleration of a point 12cm from the rotation axis when the wheel is spinning at 180rpm. (10 marks)

- (b) Write down an expression for a relation between linear and angular speed.

A car drives around a curve with radius 410m at a speed of 32m/s. The road banked at 5° . The mass of the car is 1400kg. (i) What is the frictional force on the car? (ii) At what speed could you drive around this curve so that the force of friction is zero? (10 marks)

- 4.(a) Define *work done by gravity* in words and in symbols. How much work is done on an object by a force that is perpendicular to the object's velocity?

A rabbit nervously trying to cross a road first move 80cm to the right, then 30cm to the left, then 90cm to the right and then 310cm to the left. (i) What is the rabbit's total displacement? (ii) If the elapsed time was 18s, what was the rabbit's average speed? (iii) What was its average velocity? (10 marks)

- (b) The power output of a cyclist moving at a constant speed of 6 ms^{-1} on a level road is 120 W.

(a) What is the force exerted on the cyclist and the bicycle by the air? (b) By bending low over the handlebars, the cyclist reduces the air resistance to 18 N. If she maintains a power output of 120 W, what will her speed be? (10 marks)

- 5.(a) State *law of conservation of linear momentum*.

Diana is standing on a raft of mass 100.0kg that is floating on a still lake. She decides to walk the length of the raft. If Diana's mass is 55kg and she walks with a velocity of 0.91m/s relative to the water, how fast and in what direction does the raft move while Diana is walking? Assume the raft is stationary with respect to the shore before Diana starts walking. (10 marks)

- (b) Two objects with different masses have the same kinetic energy. Which has the larger magnitude of momentum? A 2.0 kg object is at rest on a perfectly frictionless surface when it is hit by a 3.0 kg object moving at 8.0 m/s . If the two objects are stuck together after the collision, what is the speed of the combination? (10 marks)

Useful Data

$$g=9.8 \text{ N/kg or } \text{m/s}^2$$

Department of Higher Education
University of Computer Studies
First Year (B.C.Sc./B.C.Tech.)

Mid Term Examination

Introduction to Computer System (CST-101)

March, 2017

Zone IV

Time allowed: 3 hours

Answer all Questions

1. Define Any Five the following:

- | | |
|-----------------------------------|--------------------------|
| (a) Central Processing Unit (CPU) | (e) An output device |
| (b) Integrated Circuits | (f) Collating sequence |
| (c) Read – Only Memory (ROM) | (g) Compiler |
| (d) A data processing system | (h) Programming Language |
- (10 marks)

2. Differentiate Any Three of the following:

- | | |
|---|--------------|
| (a) Positional number system and non-positional number system | (12 marks) |
| (b) Assembler and Compiler | |
| (c) On-line and off-line storage of data | |
| (d) CISC processor and RISC processor | |

3. (a) Convert the following:

- | | |
|---|-------------|
| (i) $(11010011)_2 \rightarrow ()_{16}$ | (4 marks) |
| (ii) $(545)_6 \rightarrow ()_4$ | |
| (iii) $(2AB)_{16} \rightarrow ()_2$ | |
| (iv) $(110.101)_2 \rightarrow ()_{10}$ | |

(b) Using hexadecimal notation , write packed decimal coding for the number , -128 .

How many bytes are required for this representation? (2 marks)

(c) Write ASCII-8 coding for the word “Devices” in the both binary and hexadecimal notation. How many bytes are required to stores this word using this coding?

(2 marks)

4. Calculate the followings:

(10marks)

- | | |
|--|--|
| (a) A computer uses ASCII as its internal representation of character, in which order will this computer sort the strings. 23, A1, 1A, a2, 2a, aA, and Aa. | |
| (b) Add binary numbers 10111 and 1011. | |
| (c) Subtract 25_{10} from 50_{10} using complementary method. | |
| (d) Multiply binary numbers 101111 and 111. | |
| (e) Divide 11001_2 by 101_2 . | |

5. (a) What will be storage capacity of double-sided disk that has 400 tracks, 16 sectors per track, and 512 bytes per sectors. (4 marks)

(b) How many bytes will be required to store the word 'CHARACTER' in
(i) a character- addressable computer (ii) a word - addressable computer
having word length of 64 bits? (3 marks)

(c) What is data transfer rate of a magnetic tape system of 8000 bpi tape density and
500 inches per second tape speed? What is the storage capacity of a tape if the tape
is 2500 feet long? (4 marks)

(d) Rotational speed of a disk system having a single recording surface is 3600 rpm.
It has 70 sector per track and 512 bytes per sector. What is amount of
data transferred in one full revolution of disk? (4 marks)

6. Answer Any six of the followings: (30 marks)

(a) List some limitation of optical disks as a secondary storage devices.

(b) Write a short note about electronic- card reader.

(c) Draw the block diagram to illustrate basic organization of a computer system.

(d) Define and distinguish between application software and system software.

(e) What is an interpreter? How does it differ from a compiler?

(f) Write a short note monitor.

(g) Briefly and describe full backup and incremental backup.

(h) Write the advantages of magnetic tape as a secondary storage devices.

7. (a) Write the full form of the following abbreviations: (8 marks)

(i) CRT (v) WAN

(ii) EBCDIC (vi) ASCII

(iii) VLSI (vii) HTML

(iv) USB (viii) RAID

(b) (i) Write the similarities and differences between 7-bit and 8- bit ASCII code. (2 marks)

(ii) How many types of storage a computer system normally uses? Justify the need
for each storage type. (3 marks)

(iii) What happens when a computer divides a number by zero. (2 marks)

Department of Higher Education
University of Computer Studies
First Year (B.C.Sc./B.C.Tech)
Mid Term Examination
Mathematics of Computing I (CST-102)
March, 2017
Zone IV

Answer All Questions.

Time allowed : 3 hours

- 1.(a) Find the domains and ranges of the functions f , g , $f+g$, $f \cdot g$ if $f(x)=x$ and $g(x)=\sqrt{x-1}$.
- (b) Graph the function $y = \cos \pi x$. What is the period of this function?
- (c) Given the function $y = x^4 - 4x^3 + 10$. Find the formulas to compressed horizontally by a factor of 2 and stretched vertically by a factor of 3. (20 marks)
- 2.(a) Given a function $f(x) = 3 - 2x$, a point $x_0=3$ and a positive number $\varepsilon = 0.02$. Find $L = \lim_{x \rightarrow x_0} f(x)$. Then find a number $\delta > 0$ such that for all x , $0 < |x - x_0| < \delta \rightarrow |f(x) - L| < \varepsilon$.
- (b) Find the following limits.
- (i) $\lim_{h \rightarrow 0} \frac{\sqrt{2+h}-\sqrt{2}}{h}$ (ii) $\lim_{t \rightarrow -1} \frac{t^2+3t+2}{t^2-t-2}$.
- (c) Find an equation for a line that is tangent to the curve of $y = x^2 - 2x - 3$ at the point $(2, -3)$. Then sketch the curve and tangent together. (20 marks)
- 3.(a) If $x^2 + y^2 = 1$, find the value of $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ by using implicit differentiation.
- (b) Find the linearization $L(x)$ of $f(x) = \tan x$ at $x = \pi$.
- (c) Differentiate the following functions with respect to the corresponding variables.
- (i) $y = \frac{4}{3\pi} \sin 3t + \frac{4}{5\pi} \cos 5t$ (ii) $y = (x^2 + 1)(x^3 + 3)$ (20 marks)
4. (a) Find the absolute maximum and minimum values of the function $f(x) = x^2 - 1$ on $-1 \leq x \leq 2$. Then graph the function. Identify the points on the graph where the absolute extrema occur and include their coordinates.
- (b) Find the value or values of c that satisfy the equation $\frac{f(b)-f(a)}{b-a} = f'(c)$ in the conclusion of the Mean Value Theorem for the function $f(x) = x^2 + 2x - 1$ and interval $[0, 1]$.
- (c) Write the sums without sigma notation and then evaluate the following.
- (i) $\sum_{k=-1}^3 (k+1)^2$ (ii) $\sum_{k=0}^2 \frac{(-1)^k}{k+1}$ (20 marks)
- 5.(a) Find the area of the region between the X-axis and the graph of $f(x) = x^3 - x^2 - 2x$, on the interval $-1 \leq x \leq 2$.
- (b) Evaluate the following integrals.
- (i) $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} 15 \sin^4 3x \cos 3x \, dx$ (ii) $\int_0^1 \frac{36 \, dx}{(2x+1)^3}$ (iii) $\int_{-\sqrt{3}}^{\sqrt{3}} (t+1)(t^2 + 4) \, dt$. (20 marks)

Department of Higher Education
University of Computer Studies
First Year (B.C.Sc / B.C.Tech)
Mid Term Examination
CST-103(Computer Application Techniques I)
March, 2017
Zone IV

Answer all questions.

Time Allowed: 3 hours

1.(a) Create an HTML page with following:

Title of window with "Hello World"

To display the text "WWW is the World Wide Web". Use the abbr tag for the word "WWW".

Type the following.

This text is mark text.

This text is big text.

This text is small text.

I ♥ HTML5.

A relative link to menu.html, when user clicks the tulips.jpg.

Create a horizontal rule.

To create a nested list that displays your favorite subjects in three categories: HTML, JavaScript and PHP. The JavaScript category should also be divided into three types: Core, DOM and BOM.

Display the image (desert.jpg) with width and height (60,60), text message is image and align center.

Type heading 1 "Carat" with center, underline and italics.

Type the following paragraph with big text and center.

"The basic unit of measure for gemstones".

Type heading 2 "The music hall of frames" with right aligned.

Type the following paragraph with big text and indentation effect.

"This web site is dedicated to great composers maxi cans."

Create a horizontal rule.

Create the following.

LAN

Lan is Local Area Network.

WAN

Wan is Wide Area Network.

(15 marks)

1.(b) Create an html page with followings. It includes embedded CSS rules.

(i) Create a CSS rule that specify the light-blue background color of web page. Font face is arial, verdana, or sans-serif and font size is 14pixels.

(ii) Create a CSS rule that have a single solid border table. The border color is #666666 and no border spacing. Modify the table to be centered on the page with a width of 300pixels.

(iii) Create a CSS rule that configure the caption to be displayed with Verdana or the default sans-serif font typeface, bold font weight, 1.2em font size and 5pixels of bottom padding.

(iv) Create a CSS rule that specify the first row by using pseudo class to have a font color #eaeaea and background color #666.

(v) Create a CSS rule that use a structural pseudo-class which will apply the style to the even-numbered table rows with background color #cccccc. All table rows should be center aligned.

(vi) Create a CSS rule that specify the last row by using pseudo class to have a font color #eaeaea and background color #666.

(vii) Apply the above CSS rules to create following table.

Total Monthly Savings	
Monthly Savings	
Jan	100000
Feb	200000
March	100000
April	300000
May	200000
Total	900000

2.(a) Create the following LIST. (10 marks)

- Recipe
 - Soup
 - L. fish soup
 - M. chicken soup
 - Dessert
 - I. Ice Cream
 - P. chocolate
 - Q. vanilla
 - II. Cake
 - B. butter cake
 - C. cheese cake

2.(b) Write the HTML page to create the following. The heading should display Welcome to M Favorite Food Page. The form should have the following fields: user name, e-mail, and password Select box with name and value attributes: (10 marks)

Types of Food

Chinese Food

Korean Food

Myanmar Food

European Food

An unordered list with following:

A relative link to Chinese.html

A relative link to Korean.html

A relative link to Myanmar.html

A relative link to European.html

To create button for submit and reset. (10 marks)

3. Write the HTML and CSS code for an embedded style sheet that configure a background image (desired image) repeatedly, background color of #FF3366 and text color of #0FF33FF. h1,h2 should have background color green, width 500 pixels and height 80 pixels and italic style. Some paragraph should have font size 1em and bolder style. Some paragraph within a box. This box defines with blue solid line border, 2 pixels border width and 3 pixels padding. Some list item with disc marker. Create and id called notes will have center aligned, line-through and letter spacing 1em. In HTML page : use h1 for "Lengths".(called id named notes)

Type the following paragraph.(called id named notes)

"You have already seen that the values of some CSS properties are given as lengths such as the size of font, height of lines of text, and gaps between words and letters".

Type the following paragraph with bolder and size 2.5em.

"Each element is treated as if it generates a new box".

Type the following paragraph within a box."There are three of relative units: pixels which relate the resolution of the screen, and em and ex both of which relate to the size of fonts".

Type the following lists:

- Relative units
- Absolute units

(20 marks)

(10 marks)

4. Write the HTML and CSS code for an external style sheet that configures a background color of #ff6633. Some paragraph should have background color blue and margin 30pixels. Heading 1 has underline and italic. All paragraphs, h1, h2 and body should have text color pink.(Saved with format.css)

In HTML page: (It applies the CSS rules in format.css.)

Use h1 for the Pacific Trails Resort

Place the following paragraphs. (Include this paragraph background color and margin)

Pacific trails resort offers a special lodging experience on the California north coast.

Use h2 for Enjoy Nature in Luxury.

Place the following paragraph.

Relax in serenity with panoramic views of the pacific ocean.

(15 marks)

10 marks)
elcome to M
and password

5. Write the HTML and CSS code for an external style sheet that configures a background of Web page with repeated images (use desired image) horizontally and has scroll attachment. And then set the background color with #cccccc. An id selector that specifies that all elements named "note" with uppercase form and letter spacing 2em. Some element with font size 4em. Create an id selector "note1" with the following attributes: fixed position, background color green. h2, h3 should have text color orange, width 600pixels, left right margin 15pixel. Create a CSS rule that specify the list item with square marker. (Saved as exercise.css)

In HTML page: (Apply the CSS rules with exercise.css)

Use h2 for "Fish Creek Animal Hospital". (Id called note)

Place the following paragraph. "Our professionals welcome owners to stay with their pets during any medical procedure. Veterinarians and staff are on duty 24 hours a day, 7days a week."

Create the following list. (Includes the above CSS rule).

- Ice Cream
- Cake
- Chocolate

Use h3 for "Enjoy Nature In Luxury".

Place the following paragraph. (Called note1)

"Bring a sense of adventure and some time to relax".

(20 marks)

(10 marks)

background image F33FF. h1,h2 alic style. Son a box. This ne list item wi ter spacing len

s such as the s

ls which relate

(20 marks)

Department of Higher Education

University of Computer Studies

First Year (B.C.Sc / B.C.Tech.)

Mid Term Examination

Programming Logic and Design (CST-104)

March, 2017

Zone IV

Answer all Questions.

Time allowed : 3 hours

I. Which of the following are true or false?

(20 marks)

1. Hardware is the equipment, or the device, associated with a computer. Software is the computer instructions.
2. A program with no syntax errors can execute but might produce incorrect results.
3. A program that contains an infinite loop is one that never ends.
4. Many programming languages use the term fe (for “file end”) to refer to a marker that automatically acts as a sentinel.
5. If salary is a numeric variable, then the statement set salary= “12.50” is valid.
6. The assignment operator always operates from right to left; programmers say it has right-associativity.
7. Modularization eliminates abstraction, a feature that makes programs more confusing.
8. You can use a hierarchy chart to illustrate modules’ relationships.
9. The popular name for logically snarled program statements is spaghetti code.
10. A priming input is the statement that repeatedly gets all the data that is input in a program.
11. Structured programs are not easily divided into parts, making them less prone to error.
12. A Boolean expression is defined as one that decides whether two values are equal.
13. The general rule is: In an OR decision, first ask the question that is more likely to be true.
14. You can perform a range check by making comparison using the lowest value in each range of values you are using.
15. When you use a loop, you can write one set of instructions that operates on multiple, separate sets of data.
16. You need to create nested loops when the values of two (or more) variables repeat to produce every combination of values.
17. In a loop, it is a mistake to compare the loop control variable using \geq or \leq .
18. Array elements always occupy adjacent memory locations.
19. Only whole numbers can be stored in arrays.
20. Parallel arrays usually contain the same number of elements.

II. Choose the correct Answers.

(20 marks)

1. A programming language’s rules are it _____.

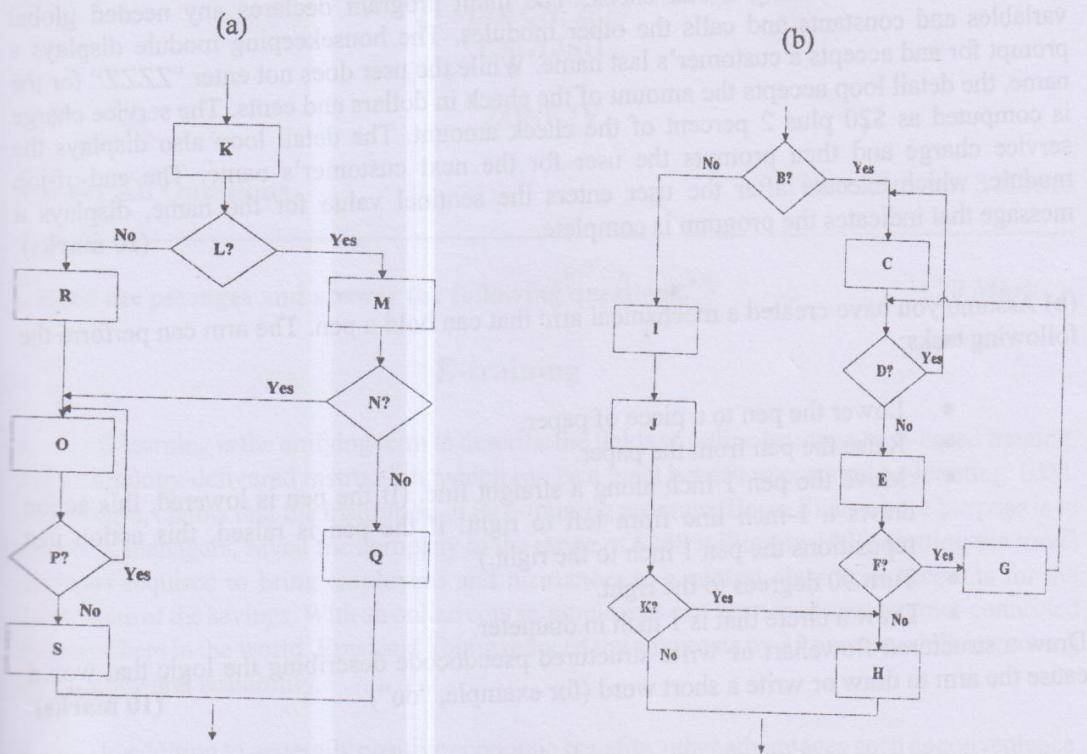
- (a) Syntax
- (b) Logic
- (c) Format
- (d) Options

2. The most important task of a compiler or interpreter is to _____.
(a) Create the rules for a programming language
(b) Translate English statements into a language the computer can understand, such as Java.
(c) Translate programming language statements into machine language.
(d) Execute machine language programs to perform useful tasks
3. The value "Hello" is a _____.
(a) numeric variable
(b) Numeric constant
(c) String variable
(d) String constant
4. Every module has all of the following except _____.
(a) A header
(b) Local variables
(c) A body
(d) A return statement
5. Which of the following is not another term for a selection structure?
(a) Decision structure
(b) If-then-else structure
(c) Dual-alternative if structure
(d) Loop structure
6. The statement if age<13 then movieTicket = 4.00 else movieTicket = 8.50 is an example of a _____.
(a) Sequence
(b) Loop
(c) Dual-alternative selection
(d) Single-alternative selection
7. Usually, you compare only variables that have the same _____.
(a) Type
(b) Size
(c) Name
(d) Value
8. If sales=100, rate=0.10 and expenses=50, which of the following expression is true?
(a) sales>=expenses AND rate<1
(b) sales >200 OR expenses>100
(c) expenses=rate OR sales=rate
(d) two of the above
9. When two loops are nested, the loop that contains the other is the _____ loop.
(a) Captive (b) Unstructured (c) Inner (d) Outer
10. Each element in a five-element array can hold _____ value(s).
(a) One (b) Five (c) At least five (d) An unlimited number of

III. Answer all questions.

(30 marks)

1. Redraw the unstructured flowcharts to structured flowcharts.



2. Draw the truth tables for the following expressions:

- (a) (A OR B) AND C
- (b) X OR Y AND Z

3. What is the output of the giving programs?

(a)

```

i=1
while i<=3
  output "Hello"
  j=j+1
  while j<=5
    output "GoodBye"
    j=j+1
  endwhile
  i=i+1
endwhile
  
```

(b)

```

department=0
while department<15
  if department<5 then
    output "Small Raise"
  else
    if department<9 then
      output "Medium Raise"
    else
      if department<15 then
        output "Big Raise"
      endif
    endif
  department = department+2
endwhile
  
```

IV. (a) Draw the hierarchy chart and design the logic for a program that contains housekeeping, detail loop, and end-of-job modules, and that calculates the service charge customers owe for writing a bad check. The main program declares any needed global variables and constants and calls the other modules. The housekeeping module displays a prompt for and accepts a customer's last name. While the user does not enter "ZZZZ" for the name, the detail loop accepts the amount of the check in dollars and cents. The service charge is computed as \$20 plus 2 percent of the check amount. The detail loop also displays the service charge and then prompts the user for the next customer's name. The end-of-job module, which executes after the user enters the sentinel value for the name, displays a message that indicates the program is complete. **(10 marks)**

(b) Assume you have created a mechanical arm that can hold a pen. The arm can perform the following tasks:

- Lower the pen to a piece of paper.
- Raise the pen from the paper.
- Move the pen 1 inch along a straight line. (If the pen is lowered, this action draws a 1-inch line from left to right; if the pen is raised, this action just repositions the pen 1 inch to the right.)
- Turn 90 degrees to the right.
- Draw a circle that is 1 inch in diameter.

Draw a structured flowchart or write structured pseudocode describing the logic that would cause the arm to draw or write a short word (for example, "do"). **(10 marks)**

(c) Secondhand Rose Resale Shop is having a seven-day sale during which the price of any unsold item drops 10 percent each day. For example, an item that costs \$ 10.00 on the first day costs 10 percent less, or \$ 9.00, on the second day. On the third day, the same item is 10 percent less than \$ 9.00, or \$ 8.10. Design an application that allows a user to input a price until an appropriate sentinel value is entered. Output is the price of each item on each day, one through seven. **(10 marks)**

(OR)

Watson Elementary School contains 30 classrooms numbered 1 through 30. Each classroom can contain any number of students up to 35. Each student takes an achievement test at the end of the school year and receives a score from 0 through 100. Write a program that accepts data for each student in the school—student ID, classroom number, and score on the achievement test. Design a program that lists the total points scored for each of the 30 classrooms. **(10 marks)**