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3 (Sem-4/CBCS) CSC SE 1/2/3/4/5

2023

**COMPUTER SCIENCE/COMPUTER
APPLICATION/INFORMATION TECHNOLOGY**

(Skill Enhancement Course)

Answer the Questions from any one Option.

OPTION - A

(R Programming)

Paper : CSC-SE-4014

OPTION - B

(HTML Programming)

Paper : CSC-SE-4024

OPTION - C

(System Administration and Maintenance)

Paper :

CSC-SE-4034

TCA-SE-4014

TIT-SE-4024

OPTION - D

(Android Programming)

Paper : CSC-SE-4044

Contd.

OPTION - E

(PHP Programming)

Paper : CSC-SE-4054

(ICT Hardware)

Paper : TCA-SE-4024

(E-Commerce Technology)

Paper : TIT-SE-4014

Full Marks : 50

Time : Two hours

The figures in the margin indicate full marks for the questions.

Answer either in English or in Assamese.

OPTION - A

(R Programming)

Paper : CSC-SE-4014

1. Answer the following questions as directed :
1×4=4

(a) R operates in two modes : interactive and _____.
(Fill in the blank)

(b) The elements of a logical vector can have the values TRUE, FALSE and NA.
(State true or false)

(c) _____ function is used to read in a vector from file or the keyboard.

(Fill in the blank)

(d) _____ is an operator that can be used to extract subsets of R objects.

(Fill in the blank)

2. Define the following terms : **(any three)**

2×3=6

(a) Vector

(b) Lapply

(c) Sapply

(d) Data frame

3. Answer **any two** of the following questions :

5×2=10

(a) Explain briefly the debugging tools of R programming.

(b) Write a function that computes the running total of a list.

(c) Explain briefly the common vector operations.

(d) Write brief description of profiler in R.

4. Answer **any three** of the following questions : $10 \times 3 = 30$

- (a) Give an overview and history of R programming.
- (b) Explain the basic data types available in R programming.
- (c) Explain the use of *any three* loop functions.
- (d) How can data frames be read from files? How to read text from files? Explain with suitable example.
- (e) Give brief description of *any five* control structures in R programming.
- (f) List the inbuilt summary functions to apply on vectors. Create a vector and apply all functions on it.

OPTION - B

(HTML Programming)

Paper : CSC-SE-4024

1. Answer the following questions : $1 \times 4 = 4$

তলত দিয়া প্রশ্নৰ উত্তৰ লিখিবা :

(a) What is formatting in HTML ?

HTML ত ফৰ্মেটিং কি?

(b) The textual content that appears in the source HTML document but is not rendered by the browser is called ____.

(Fill in the blank)

উৎস HTML দস্তাবেজত দেখা দিয়া কিন্তু ব্ৰাউজাৰে
ৰেণ্ডাৰ নকৰা পাঠ্য বিষয়বস্তুক ____ বোলা হয়।

(খালী ঠাই পূৰণ কৰা)

(c) What is <blink> tag ?

<blink> টেগ কি?

(d) Which of the following is correct ?

তলৰ কোনটো শুদ্ধ ?

(i) `<input type="radio" name="animal" value="Zebra">Zebra`

`<input type="radio" name="animal" value="Lion">Lion`

`<input type="radio" name="animal" value="Elephant">Elephant`

- (ii) ☐Zebra
☐Lion
☐Elephant

2. Answer the following questions : $2 \times 3 = 6$

তলৰ প্রশ্নসমূহৰ উত্তৰ দিয়া :

(a) What are HTML element ?

HTML উপাদান কি কি?

(b) Write output of the following HTML code :

তলৰ HTML ক'ডৰ আউটপুট লিখা :

```
<html><head><title>Table</title></head>
```

```
<body>
```

```
<table border="1">
```

```
<tr><th align="centre" rowspan="3">ONE</th><th>TWO</th><th>THREE</th></tr>
```

```
<tr><td>Rose</td><td>Lily</td></tr>
```

```
<tr><td align="centre">Pansy</td><td align="centre" colspan="2">Dahlia</td></tr></table></body></html>
```

(c) Write about image tag and font tag.

ইমেজ টেগ আৰু ফন্ট টেগৰ বিষয়ে লিখা।

3. Answer **any two** of the following questions :

$5 \times 2 = 10$

তলৰ প্রশ্নসমূহৰ যিকোনো দুটাৰ উত্তৰ দিয়া :

(a) What is form ? What are different methods used in form ?

প্রপত্ৰ কি? কিহৰ পৰা বিভিন্ন পদ্ধতি ব্যৱহাৰ কৰা হয়?

(b) Write code to create the following HTML form to accept user's information as part of a magazine survey :

আলোচনী জৰীপৰ অংশ হিচাপে ব্যৱহাৰকাৰীৰ তথ্য গ্ৰহণ কৰিবলৈ নিম্নলিখিত HTML প্রপত্ৰ সৃষ্টি কৰিবলৈ ক'ড লিখা :

Name

Address

Male ☐ Female ☐

You came to know about our magazine from :

আমাৰ আলোচনীৰ প্রপত্ৰৰ বিষয়ে আপুনি জানিব পাৰিলে :

☐ Friend ☐ Newspaper

☐ TV/Radio ☐ Others

- (c) Write an HTML code to generate the given table in web page exactly as given :

ৰেব পৃষ্ঠাত দিয়া টেবুলখন হুবহু দিয়া ধৰনে সৃষ্টি কৰিবলৈ এটা HTML ক'ড লিখা :

SUPPLIERS			
SUPPLIER ID	SUPPLIER NAME	STATUS	CITY
S1	Britannia	20	Rajasthan

- (d) Explain table tag with its attributers by an example.

টেবুল টেগক ইয়াৰ বৈশিষ্ট্যসমূহৰ সৈতে এটা উদাহৰণৰ দ্বাৰা ব্যাখ্যা লিখা।

4. Answer **any three** of the following questions : $10 \times 3 = 30$

তলৰ প্ৰশ্নসমূহৰ যিকোনো তিনিটাৰ উত্তৰ দিয়া :

- (a) Write different types attributes of frameset HTML.

ফ্রেমছেট HTML ৰ বিভিন্ন ধৰনৰ বৈশিষ্ট্য লিখা।

- (b) Explain different types of Hyperlinks (or) anchor tag.

বিভিন্ন ধৰনৰ হাইপাৰলিংক (বা) এংকৰ টেগ ব্যাখ্যা কৰা।

- (c) Write a program in HTML for the following output :

তলৰ আউটপুটৰ বাবে HTML ত এটা প্ৰগ্ৰাম লিখা :

- (i) Arts
 (a) Education
 (b) Philosophy
 (c) Sanskrit
- (ii) Science
 (a) Chemistry
 (b) Physics
 (c) Computer Science
- (iii) Commerce
 (a) Accountancy
 (b) Management
 (c) Banking

- (d) Write HTML code for the following form :

নিম্নলিখিত ফৰ্মৰ বাবে HTML ক'ড লিখা :

Registration Form

User Name	
Password	
Confirm Password	
First Name	
Last Name	
Phone Number	
Location	
Save	Reset

- (e) Explain the use of the following tags in HTML :

তলত দিয়া HTML ৰ টেগসমূহৰ ব্যৱহাৰৰ বিষয়ে ব্যাখ্যা কৰা :

- (i) <pre>
- (ii) <strike>
- (iii) <hr>
- (iv)
- (v) <th>

- (f) Write HTML code to draw your class timetable.

HTML code ৰ জৰিয়তে তোমাৰ শ্ৰেণীৰ সময়সূচী কেনেকৈ প্ৰস্তুত কৰিব লাগিব।

OPTION - C

(System Administration and Maintenance)

Paper : CSC-SE-4034/TCA-SE-4014/TIT-SE-4024

1. Answer the following questions : 1×4=4

- (a) Server computers configured with active directory are known as

- (i) group policy
- (ii) Windows domain
- (iii) site and domain policy
- (iv) domain controller

- (b) New server manager creates

- (i) server group manage
- (ii) hyper-V replication
- (iii) power shell
- (iv) IIS 8.0 and IIS 7 in 2008

- (c) Loopback address is

- (i) 127.0.0.0
- (ii) 127.127.0.1
- (iii) 127.0.0.1
- (iv) 127.127.127.0

(d) _____ contains the memory of a virtual machine or snapshot that is in a saved state.

(i) .BIN files

(ii) .VSV files

(iii) .AVHD files

(iv) .XML files

2. Answer the following questions : $2 \times 3 = 6$

(a) Define .VHD files.

(b) What is the Windows Registry ?

(c) Define BitLocker.

3. Answer the following questions : *(any two)*
 $5 \times 2 = 10$

(a) Explain the working method of DHCP.

(b) Note down the difference between software publishing and assigning.

(c) Explain the difference between firewall and anti-virus.

(d) What is a persistent object ? What command do we use to get rid of lingering objects ? Why is it crucial to get rid of the lingering objects ?

4. Answer the following questions : *(any three)*
 $10 \times 3 = 30$

(a) Explain the term .NETBIOS. Describe the implicit intent. What are NETBIOS service ?

(b) What does an RODC do ? Explain. What are the major benefits of using RODCs ?

(c) Note down the difference between micro and monolithic kernel. Draw the structure diagram of macrokernel.

(d) Describe the features and architecture of Windows C5. Draw the architectural diagram too.

(e) Write short notes on terminal, bash shell, corn shell, echo, trash.

(f) Briefly describes about client services and server services of UNIX OS.

OPTION - D

(Android Programming)

Paper : CSC-SE-4044

1. Answer the following questions : $1 \times 4 = 4$

(a) In android, mini activities are also known as

- (i) adapter
- (ii) activity
- (iii) fragments
- (iv) None of the above

(b) Activity in android can be killed using

- (i) finish activity (int request code)
- (ii) finish () method
- (iii) Neither (i) nor (ii)
- (iv) None of the above

(c) Transient data in android is

- (i) logical data
- (ii) secure data
- (iii) temporary data
- (iv) permanent data

(d) Who develops Dalvik virtual machine ?

- (i) James Gosling
- (ii) Dennis Ritchie
- (iii) Dan Bornstein
- (iv) Dalvik Austin

2. Answer the following questions : $2 \times 3 = 6$

(a) Define android manifest.

(b) Define fragments.

(c) What is gradle creation ? Define tool bar.

3. Answer the following questions : **(any two)**
 $5 \times 2 = 10$

(a) Write android code to capture images from rear and front both cameras.

(b) Write Kotlin code to display an image and button. On button click the image is changed. The images are put inside the resource folder.

(c) Describe SDK. How does SDK work ? Draw the structure diagram of SDK.

(d) Describe open handset alliance. State the services of OHA.

4. Answer the following questions : **(any three)**
 $10 \times 3 = 30$

(a) Write Kotlin code to develop scientific calculator using layout.

(b) Write android code (XML and main activity code) to develop an application for connecting to the internet and sending e-mail.

- (c) Write android code (XML and main activity code) to develop an application for working with graphics and animation.
- (d) Explain android architecture briefly. Draw the diagram also.
- (e) Draw the activity lifecycle diagram and describe about it briefly.
- (f) Write android code to use linear layout to create a simple application that will take the contents of a predefined text view and use a button to cause the application to take that text. Convert it to upper case and display it in an edit text field.

OPTION - E

(PHP Programming)

Paper : CSC-SE-4054

1. Answer the following questions as directed :

1×4=4

তলত দিয়া প্ৰশ্নবোৰৰ নিৰ্দেশানুযায়ী উত্তৰ লিখা :

- (a) _____ is used to add a comment in PHP code. (Fill in the blank)

PHP code ত comment লিখিবলৈ _____ ব্যৱহাৰ কৰা হয়। (খালী ঠাই পূৰণ কৰা)

- (b) Value of the expression 5%-3 is _____. (Fill in the blank)

5%-3 ৰাশিটোৰ মান _____। (খালী ঠাই পূৰণ কৰা)

- (c) PHP allows default argument values. (State true or false)

PHP ত default argument প্ৰযোজ্য। (শুদ্ধ নে অশুদ্ধ লিখা)

- (d) _____ arrays are used to store key value pairs. (Fill in the blank)

_____ arrays ত key value জুটি সংৰক্ষণ কৰিব পাৰি। (খালী ঠাই পূৰণ কৰা)

2. Define the following terms : $2 \times 3 = 6$

তলত দিয়া পদবোৰৰ সংজ্ঞা লিখা :

- (a) Web server
- (b) Global variable
- (c) Regular expression

3. Answer **any two** of the following : $5 \times 2 = 10$

যিকোনো দুটা প্ৰশ্নৰ উত্তৰ লিখা :

- (a) What are the important tools and software requirements for PHP programming ?

PHP programming ৰ বাবে আবশ্যকীয় আহিলা আৰু software বোৰ কি?

- (b) Write the difference between GET and POST methods in PHP with example.

PHP ত থকা GET আৰু POST পদ্ধতিৰ পাৰ্থক্যবোৰ উদাহৰণসৈতে লিখা।

- (c) Explain with example call by value and call by reference in PHP.

PHP ত call by value আৰু call by reference উদাহৰণসৈতে বৰ্ণনা কৰা।

- (d) What are the differences between indexed based array and associative array ? Give example.

Indexed based array আৰু associative array ৰ পাৰ্থক্যবোৰ কি?

4. Answer **any three** of the following questions : $10 \times 3 = 30$

তলত দিয়া প্ৰশ্নবোৰৰ যিকোনো তিনিটাৰ উত্তৰ লিখা :

- (a) Write a brief description of **any five** string-related library functions.

String সম্পৰ্কযুক্ত যিকোনো পাঁচটা library functions ৰ বৰ্ণনা দিয়া।

- (b) Explain the following functions with suitable example :

তলত দিয়া ফাংচনবোৰৰ উদাহৰণসৈতে বৰ্ণনা কৰা :

`preg_match ()`

`preg_replace ()`

`preg_grep ()`

`preg_split ()`

`preg_quote ()`

- (c) Write a PHP program to check whether the given number is prime or not.

সংখ্যা এটা মৌলিক সংখ্যা হয় নে নহয় পরীক্ষা কৰিবলৈ এটা PHP প্রগ্রাম লিখা।

- (d) Write a PHP script that removes white spaces from a string.

এটা string ৰ পৰা white spaces বোৰ আতৰাবলৈ এটা PHP script লিখা।

- (e) Write a PHP program to check that emails are valid.

email ৰ বৈধতা পরীক্ষা কৰিবলৈ এটা PHP program লিখা।

- (f) Write a PHP program to print Fibonacci series using recursion.

Recursion ব্যৱহাৰ কৰি Fibonacci ক্ৰম print কৰিবলৈ PHP program লিখা।

OPTION - E

(ICT Hardware)

Paper : TCA-SE-4024

1. Answer the following questions : $1 \times 4 = 4$

তলৰ প্রশ্নৰ উত্তৰ দিয়া :

- (a) What is memory unit ?

Memory unit কি?

- (b) Printer is an input device.

(Write true or false)

Printer এবিধ input সজুলি। (সচা নে মিছা লিখা)

- (c) What is bus ?

Bus কি?

- (d) Give the full form of FAT.

FAT ৰ সম্পূর্ণ ৰূপটো লিখা।

2. Answer the following questions : $2 \times 3 = 6$

তলৰ প্রশ্নৰ উত্তৰ দিয়া :

- (a) Differentiate between cache memory and virtual memory.

Cache memory আৰু virtual memory ৰ মাজত পাৰ্থক্য লিখা।

(b) List *two* features of USB.

USB ৰ দুটা গুণ লিখা।

(c) What are the different types of ROMs ?

বিভিন্ন ধৰনৰ ROM বিলাক কি কি?

3. Answer *any two* questions from the following : $5 \times 2 = 10$

তলৰ যিকোনো দুটা প্ৰশ্নৰ উত্তৰ দিয়া :

(a) Write the steps for installing additional HDD.

অতিৰিক্ত HDD স্থাপন কৰাৰ ক্ৰমবোৰ লিখা।

(b) Briefly explain the different types of RAMs.

বিভিন্ন ধৰনৰ RAM ৰ বিষয়ে চমুকৈ ব্যাখ্যা কৰা।

(c) Write a short note on preventive maintenance of PC.

PC ৰ প্ৰতিৰোধ ৰক্ষাকৰণৰ ওপৰত এটি চমু টোকা লিখা।

(d) What is DVD ROM ? What is the difference between CD ROM and DVD ROM ? What are the major applications of CD ROM ?

DVD ROM কি? CD ROM আৰু DVD ROM ৰ মাজত পাৰ্থক্য কি? CD ROM ৰ প্ৰধান প্ৰয়োগবোৰ কি কি?

4. Answer *any three* questions from the following : $10 \times 3 = 30$

তলৰ যিকোনো তিনিটা প্ৰশ্নৰ উত্তৰ কৰা :

(a) Explain the logical structure and file system of hard disk drive.

Hard disk drive ৰ যুক্তিপূৰ্ণ গঠনি আৰু file system ৰ বিষয়ে ব্যাখ্যা কৰা।

(b) Give the block diagram of computer system and explain its various functional units.

Computer system ৰ খণ্ডচিত্ৰ দিয়া আৰু ইয়াৰ বিভিন্ন কাৰ্য্যকৰী অংশসমূহ ব্যাখ্যা কৰা।

(c) Explain on the basis of classification according to size, purpose and data process of computer.

আকাৰ, উদ্দেশ্য আৰু ডাটা প্ৰচেছৰ ওপৰত ভিত্তি কৰি কৰা কম্পিউটাৰৰ শ্ৰেণীবিভাজনৰ বিষয়ে ব্যাখ্যা কৰা।

- (d) Write down the steps for disk formatting, driver installation and disk defragmentation.

Disk formatting, driver installation আৰু disk defragmentation ৰ বাবে ক্ৰমসমূহ লিখা।

- (e) Describe the various peripheral devices of computer system.

কম্পিউটাৰ চিষ্টেমৰ বিভিন্ন peripheral আহিলাসমূহ বৰ্ণনা কৰা।

- (f) Write short notes on :

চমু টোকা লিখা :

- (i) Socket
- (ii) Slot
- (iii) SMPS
- (iv) Motherboard

OPTION - E

(E-Commerce Technology)

Paper : TIT-SE-4014

1. Answer the following questions: 1×4=4

(a) _____ is an early form of E-Commerce.

- (i) SCM
- (ii) EDI
- (iii) Both of the above
- (iv) None of the above

(b) Which of the following is not a user of B2C E-Commerce ?

- (i) Distributors
- (ii) Manufacturers
- (iii) Publishers
- (iv) None of the above

(c) Which of the following is not a B2B E-Commerce ?

- (i) Sending and receiving orders
- (ii) Invoice and shopping
- (iii) All of the above
- (iv) None of the above

(d) _____ is not a horizontal portal.

- (i) Yahoo
- (ii) SailNet
- (iii) MSN/Windows Live
- (iv) AOL

2. Answer the following questions : $2 \times 3 = 6$

- (a) Define E-Commerce.
- (b) Define B2G business model.
- (c) Define B2C business model.

3. Answer the following questions : **(any two)**
 $5 \times 2 = 10$

- (a) Write the difference between E-Commerce and traditional commerce.
- (b) Explain the domain control. Give example.
- (c) Explain the components of E-Commerce.
- (d) Describe about E-marketing.

4. Answer the following questions : **(any three)**
 $10 \times 3 = 30$

- (a) Define EDI. Explain the advantages and disadvantages.

(b) Describe the architectural framework of E-Commerce. Explain the application services.

(c) Explain all types of E-Commerce model.

(d) Describe the benefits of E-Commerce and benefits of consumers.

(e) Explain the limitations of E-Commerce. What is internet outrage ?

(f) Write the steps of online security. Note down the advantages and disadvantages of electronic payment.