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

2022

COMPUTER SCIENCE

(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

OPTION - D

(*Android Programming*)

Paper : CSC-SE-4044

OPTION - E

(*PHP Programming*)

Paper : CSC-SE-4054

Full Marks : 50

Time : Two hours

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

Answer **either** in English **or** in Assamese.

Contd.

OPTION - A

(R Programming)

Paper : CSC-SE-4014

1. Answer the following questions as directed :
(any four) $1 \times 4 = 4$

(a) R is a scripting language for statistical data manipulation and analysis.
(State true or false)

(b) R operates in two modes — interactive and _____.
(Fill in the blank)

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

(d) Functions are themselves objects in R which can be stored in the project's workspace.
(State true or false)

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

(f) _____ is an operator that can be used to extract subsets of R objects.
(Fill in the blank)

(g) The only environment without a parent is the _____ environment.
(Fill in the blank)

(h) _____ loop over a list and evaluate a function on each element.
(Fill in the blank).

2. Define the following terms : (any three)
 $2 \times 3 = 6$

(a) Vector

(b) : Operator

(c) Lapply

(d) Sapply

(e) Data frame

(f) scan() function

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

(a) Write a function that returns the largest element in a list.

(b) Write a program that asks the user for a number n and prints the sum of the numbers 1 to n .

- (c) Explain briefly the debugging tools of R programming.
- (d) Write a function that computes the running total of a list.
- (e) Explain briefly the common vector operations.
- (f) Write a brief description of profiler in R.

4. Answer **any three** of the following questions : 10×3=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) Give an overview of how scope works in R.
- (e) How can data frames be read from files? How to read text from files? Explain with suitable example.

- (f) Give brief description of *any five* control structures in R programming.
- (g) Write the functions for bubble sort and binary search.
- (h) 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 **any four** of the following questions:
1×4=4

তলত দিয়া যিকোনো চাৰিটা প্ৰশ্নৰ উত্তৰ লিখিবা :

- (a) What is the full form of HTML?
HTML ৰ সম্পূৰ্ণ ৰূপটো কি ?
- (b) Web pages contain _____ to other web pages.
(Fill in the blanks)
ৱেব পৃষ্ঠাত অন্য ৱেব পৃষ্ঠালৈ _____ থাকে।
(খালী ঠাই পূৰণ কৰা)
- (c) What is tag?
 টেগ কি ?
- (d) Define <marquee> tags.
<marquee> টেগৰ সংজ্ঞা দিয়া।
- (e) What is <object> tag?
<object> টেগ কি ?
- (f) Give the syntax of tag.
 টেগৰ বাক্যবিন্যাস দিয়া।
- (g) Define <pre> tag with an example.
এটা উদাহৰণৰ সৈতে <pre> টেগ সংজ্ঞায়িত কৰা।

- (h) What is an unordered list?

অক্ৰমিত (unordered) তালিকা কি ?

2. Answer **any three** of the following questions:
2×3=6

তলৰ প্ৰশ্নসমূহৰ যিকোনো তিনিটাৰ উত্তৰ দিয়া :

- (a) What are lists in HTML?
HTML ত lists কি ?
- (b) What is the difference between <strike> and <blink> tags.
<strike> আৰু <blink> টেগৰ পাৰ্থক্য কি ?
- (c) Explain rowspan and colspan with an example.
এটা উদাহৰণৰ সৈতে rowspan আৰু colspan ব্যাখ্যা কৰা।
- (d) Define semantic elements in HTML.
HTML ত semantic উপাদানসমূহ সংজ্ঞায়িত কৰা।
- (e) Write the basic structure of the HTML template.
HTML সাঁচৰ মূল গঠন লিখা।
- (f) What is a frame?
ফ্রেম কি ?

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

5×2=10

তলৰ প্ৰশ্নসমূহৰ যিকোনো দুটাৰ উত্তৰ দিয়া :

(a) Explain the basic table tags with different attributes.

বিভিন্ন বৈশিষ্ট্যৰ সৈতে মূল টেবুল টেগসমূহ ব্যাখ্যা কৰা।

(b) Explain the attributes of <input> tag with an example.

<input> টেগৰ বৈশিষ্ট্যসমূহ এটা উদাহৰণৰ সৈতে ব্যাখ্যা কৰা।

(c) What are different types of headings in HTML?

HTML ত শিৰোনামৰ বিভিন্ন ধৰণৰ স্তৰ কি কি ?

(d) Write the differences between <table width="400" height="200"> and <table width="100%" height="50%">.

<টেবুলৰ প্ৰস্থ "৪০০" উচ্চতা "২০০"> আৰু <টেবুলৰ প্ৰস্থ "১০০%" উচ্চতা = "৫০%"> ৰ মাজত পৃথক কি কি লিখা।

(e) What is the importance of the HTML DOCTYPE?

HTML DOCTYPE ৰ গুৰুত্বপূৰ্ণ কথাটো কি ?

(f) Write the purpose of , , <u>, <sub>, <sup> tags with example.

উদাহৰণৰ সৈতে , , <u>, <sub>, <sup> টেগসমূহৰ উদ্দেশ্য লিখা।

4. Answer **any three** of the following questions:

10×3=30

তলৰ প্ৰশ্নসমূহৰ যিকোনো তিনিটাৰ উত্তৰ দিয়া :

(a) How to add image to your HTML document?

HTML নথিপত্ৰত ছবি কেনেকৈ যোগ কৰিবা ?

(b) Explain formatting tags of HTML document.

HTML নথিপত্ৰৰ ফৰ্মেটিং টেগসমূহ ব্যাখ্যা কৰা।

(c) Explain the creation and usage of frames in HTML with an example.

HTML ত ফ্রেমৰ সৃষ্টি আৰু ব্যৱহাৰৰ বিষয়ে এটা উদাহৰণ দি ব্যাখ্যা কৰা।

(d) Explain <table> tag with all attributes and example.

সকলো বৈশিষ্ট্য আৰু উদাহৰণৰ সৈতে <table> টেগ ব্যাখ্যা কৰা।

(e) Write HTML code for the following form :

নিম্নলিখিত ফর্মৰ বাবে HTML ক'ড লিখা :

First Name

Last Name

Address

Date of Birth

Password

Gender ☐ Male ☐ Female

Faculty ☐ IT ☐ Civil ☐ Electrical

Comment

(f) Create an HTML document with the following formatting options :
নিম্নলিখিত ফৰ্মেটিং বিকল্পসমূহৰ সৈতে এটা HTML দস্তাবেজ সৃষ্টি কৰা :

- Bold (গাঢ়)
- Italics (ইটালিক)
- Underline (আঁতৰলাইন)
- Font (Type, Size and Color)
ফন্ট (প্ৰকাৰ, আকাৰ আৰু ৰং)
- Background (Colored background/
Image in background)
পটভূমি (ৰঙীন পটভূমি/পটভূমিত ছবি)

(g) Explain the use of the following tags in HTML :

তলত দিয়া HTML ৰ টেগসমূহৰ বিষয়ে ব্যাখ্যা কৰা :

- <div>
- <break>
-
- <p>
- <hr>

(h) Write HTML code to draw the following table :

তলত দিয়া টেবুলখন আঁকিবলৈ ক'ড লিখা :

	Average		Red eyes
	Height	Weight	
Males	2.8	0.006	56%
Females	2.6	0.001	62%

OPTION - C

(System Administration and Maintenance)

Paper : CSC-SE-4034

1. Answer the following questions : (any four)
1×4=4

ଉତ୍ତର ଅନୁସାରେ ଉତ୍ତର ଲିଖି : (୧/୧/୧/୧)

(a) The assembled programme in the ROM is called

ROM ଓ ଏହା assembled programme ଓ ନାମ

(i) hardware

(ii) firmware

(iii) software

(iv) All of the above

(b) In which interface one bit is transferred at a time ?

କମ୍ପ୍ୟୁଟି interface ଓ ଏହା ମଧ୍ୟରେ one bit transfer କରାଯାଏ ?

(i) Parallel

(ii) SCSI

(iii) Serial

(iv) Firmware

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(c) Serial Port is known as _____
ସିରିଆଲ ପୋର୍ଟ ————— କିମ୍ବା କିମ୍ବା ନାମ ।

(i) DVI

(ii) COM1

(iii) LPT1

(iv) SCSI

(d) For which factor of the following does a VGA connector comply with ?

ଉତ୍ତର କମ୍ପ୍ୟୁଟିର କାର୍ଡରେ ଥିବା VGA connector ଓ ମଡେଲ୍ କିମ୍ବା ?

(i) 15-pin D shell

(ii) 8P 8C

(iii) Micro ATX

(iv) RG-6

(e) Intel Pentium chip uses

Intel Pentium chip ଓ ଏହାରେ କିମ୍ବା ?

(i) CISC design

(ii) RISC design

(iii) Both of the above

(iv) None of the above

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Contd.

(f) The most secured remote access program is

আটাইতকৈ সুৰক্ষিত remote access program টো হ'ল

(i) Telnet

(ii) Rlogin

(iii) SSH

(iv) FTP

(g) Which mail process is first used when mail is sent for the sender's mail client program?

Sender's mail client program ত নিম্নোক্ত কোনটো mail process প্রথম mail পঠোৱাত ব্যৱহাৰ হয় ?

(i) TA

(ii) MDA

(iii) MBA

(iv) MUA

(h) cpio program can be used with redirection and piping.

cpio program ৰ ব্যৱহাৰ redirection and piping ৰ সৈতে ব্যৱহাৰ কৰা যায়।

(i) True

(ii) False

(iii) May be

(iv) Can't say

2. Answer the following questions : (any three)
2×3=6

তলৰ প্ৰশ্নবোৰৰ উত্তৰ দিয়া : (তিনিটাৰ)

(a) Define redirection.

Redirection ৰ সংজ্ঞা লিখা।

(b) Define kernel.

Kernel ৰ সংজ্ঞা লিখা।

(c) What is directory? What does '/bin' directory do?

Directory কি ? '/bin' directory ৰ কাম কি ?

(d) Define server. Give examples.

Server ৰ সংজ্ঞা লিখা। উদাহৰণ দিয়া।

(e) Define ipconfig.

ipconfig ৰ সংজ্ঞা লিখা।

(f) How does sharing printer work?

Sharing printer এ কেনেকৈ কাম কৰে ?

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

তলৰ প্ৰশ্নবোৰৰ উত্তৰ লিখা : (দুটাৰ)

(a) Explain package installation. Give some package names.

Package installation ৰ ব্যাখ্যা কৰা। কেইটামান package ৰ নাম লিখা।

(b) Describe computer management and active directory.

Computer management আৰু active directory ৰ বিশদ বিৱৰণ লিখা।

(c) Explain how antivirus works.

Antivirus এ কেনেকৈ কাম কৰে, ব্যাখ্যা কৰা।

(d) Explain files and folder over the network.

Files and folder over the network ৰ বিষয়ে ব্যাখ্যা কৰা।

(e) How can you create admin and regular user? Explain with code.

Code সহ বৰ্ণনা কৰা তুমি কেনেকৈ admin and regular user account create কৰিবা।

(f) Write short notes on Terminal, Shell and Echo.

Terminal, Shell, Echo ওপৰত চমু টোকা লিখা।

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

তলৰ প্ৰশ্নবোৰৰ উত্তৰ লিখা : (যিকোনো তিনিটাৰ)

(a) Write the installation steps and configuration steps of linux operating system.

Linux operating system ৰ installation আৰু configuration ৰ step বোৰ লিখা।

(b) Explain about server services and client services.

Server services আৰু client services ৰ বিষয়ে ব্যাখ্যা আগবঢ়োৱা।

- (c) Differentiate between workgroup and domain. Explain the role of domain.

Workgroup আৰু domain ৰ মাজত পাৰ্থক্য লিখা।
Domain ৰ role ব্যাখ্যা কৰা।

- (d) Describe the features and architecture of Linux. Draw the architectural diagram too.

Linux ৰ সুবিধা সমূহ আৰু গঠন সম্পৰ্কে ব্যাখ্যা কৰা।
Linux ৰ গঠনৰ চিত্ৰও অঙ্কন কৰিবা।

- (e) Explain the structure of monolithic and macro kernel.

Monolithic আৰু macro kernel ৰ গঠন ব্যাখ্যা কৰা।

- (f) Explain the structure of firewall and it's role.

Firewall ৰ গঠন আৰু ভূমিকা ব্যাখ্যা কৰা।

- (g) Write the syntax and uses of cat, ifconfig, kill, rmdir, rm, date, ls-h, cd, adduser, echo.

cat, ifconfig, kill, rmdir, rm, date, ls-h, cd, adduser, echo ৰ syntax আৰু ব্যৱহাৰৰ বাবে উল্লেখ কৰা।

- (h) Note down the features, advantages, disadvantages of Linux operating system.

Linux operating system ৰ সুবিধা, অসুবিধা আৰু features ৰ বৰ্ণনা কৰা।

OPTION - D

(Android Programming)

Paper : CSC-SE-4044

1. Answer the following questions : *(any four)*
1×4=4

তলৰ প্ৰশ্নবোৰৰ উত্তৰ লিখা : (যিকোনো চাৰিটা)

- (a) Which of the following is the first mobile phone released that ran the android OS?

তলৰ কোনটো mobile প্ৰথম mobile আছিল য'ত প্ৰথম এণ্ড্ৰইড (android) OS install কৰা আছিল ?

- (i) HTC Hero
- (ii) Google gPhone
- (iii) T-Mobile G1
- (iv) None of the above

- (b) Which of the following convertor converts Java byte code into the Dalvik byte code?

তলৰ কোনটো পৰিৱৰ্তকে Java byte code ক Dalvik byte code লৈ পৰিৱৰ্তন কৰে ?

- (i) Dalvik converter
- (ii) Dex compiler
- (iii) Mobile interpretive compiler (MIC)
- (iv) None of the above

- (c) Which method is used for stopping the services in android?

Android ত service বোৰ বন্ধ কৰিবলৈ কোন পদ্ধতি ব্যবহৃত হয় ?

- (i) finish() method
finish() পদ্ধতি
- (ii) system.exit() method
system.exit() পদ্ধতি
- (iii) stopself() and stopservice() method
stopself() and stopservice() পদ্ধতি
- (iv) None of the above

- (d) _____ is not an activity lifecycle call-back method.

_____ এটা activity lifecycle call-back পদ্ধতি নহয়।

- (i) onBackPressed() method
onBackPressed() পদ্ধতি
- (ii) onClick() method
onClick() পদ্ধতি
- (iii) onCreate() method
onCreate() পদ্ধতি
- (iv) onStart() method
onStart() পদ্ধতি

(e) AAPT stands for

AAPTৰ full form কি ?

- (i) Android Action Packaging Tool
- (ii) Android Activity Packaging Tool
- (iii) Android Asset Packaging Tool
- (iv) None of the above

(f) Parent class of activity is known as
Parent class of activity ক জনা যায়

- (i) ContextThemeWrapper
- (ii) context
- (iii) object
- (iv) None of the above

(g) In android OHA stands for
Androidত OHAৰ full form কি ?

- (i) Open Health Academy
- (ii) Open Handset Alliance
- (iii) Open Handset Application
- (iv) Open Handset Association

(h) Under which licensing license Android OS is licensed ?

কোনটো licensing license ৰ অধীনত Android OS ক licence দিয়া হৈছে ?

- (i) Sourceforge
- (ii) OSS
- (iii) Apache/MIT
- (iv) GNU's GPL

2. Answer the following questions : **(any three)**

2×3=6

তলৰ প্ৰশ্নবোৰৰ উত্তৰ দিয়া : (যিকোনো তিনিটা)

(a) Define SDK.

SDKৰ সংজ্ঞা লিখা।

(b) Define gradle.

Gradleৰ সংজ্ঞা দিয়া।

(c) What are toast and status bar ?

Toast আৰু status bar কি ?

(d) What is data binding? How does it work?

Data binding কি? ই কেনেকৈ কাম কৰে?

(e) What is class path? What is environmental variable?

Class path কি? Environmental variable কি?

(f) How does Webview work?

Webview এ কেনেকৈ কাম কৰে?

3. Answer the following questions : (any two)
5×2=10

তলৰ প্ৰশ্নবোৰৰ উত্তৰ দিয়া : (যিকোনো দুটা)

(a) Explain emulator. How does emulator work?

Emulator ৰ বৰ্ণনা কৰা। ই কেনেকৈ কাম কৰে?

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

image আৰু button দেখুৱাবলৈ Android studio ত code লিখা। button ত click কৰাৰ লগে লগে ছবি সলনি হ'ব লাগিব। image বোৰ resource folder ৰ ভিতৰত থাকিব লাগিব।

(c) Write android code to capture images from front camera.

Front camera ৰে ছবি উঠাবলৈ দৰকাৰ হোৱা android code লিখা।

(d) Write android code to activate auto activate mode for proximity sensor and fingerprint sensor.

Proximity sensor আৰু fingerprint sensor auto activate কৰিবলৈ ব্যৱহাৰ হোৱা android code লিখা।

(e) What is manifest? Write code as example.

Manifest কি? উদাহৰণ হিচাপে code লিখা।

- (f) What is Kotlin? Write Kotlin code to add an image inside a frame.

Kotlin কি? ছবি এটা frame ৰ ভিতৰত ভৰাবলৈ দৰকাৰ হোৱা Kotlin code লিখা।

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

তলৰ প্ৰশ্নবোৰৰ উত্তৰ দিয়া : (যিকোনো তিনিটা)

- (a) Write android code for static broadcast receiver features. When a SMS comes, it displays an alert message.

Static broadcast receiver features ৰ android code লিখা। য'ত SMS অহাটো alert message হিচাপে দেখুৱায়।

- (b) Write android code to create a database and read its values and display it in android. Use cursor if necessary.

নতুনকৈ database এটা বনাবলৈ আৰু তাৰ value বোৰ দেখুৱাবলৈ android code লিখা। যদি দৰকাৰ হয় cursor ব্যৱহাৰ কৰিবা।

- (c) Write android code to develop an application to store employees' details like emp_no., name, dept, basic_salary, da, other_allowences, gross_salary and retrieve employees' information using emp_no. in SQLite databases.

SQLite database ত employee details তথ্য সংৰক্ষণ কৰিবলৈ android code লিখা আৰু emp_no. field টো ব্যৱহাৰ কৰি তথ্যসমূহ retrieve কৰা। তথ্যৰ প্ৰকাৰ emp_no., name, dept, basic_salary, da, other_allowences, gross_salary.

- (d) Write android code to develop scientific calculator using layout.

Layout ব্যৱহাৰ কৰি scientific calculator develop কৰিবলৈ android code লিখা।

- (e) Write android code to locate user's current location application.

User's current location application ত location locate কৰিবলৈ ব্যৱহাৰ হোৱা android code লিখা।

- (f) Define content provider and explain fragments.

Content provider ৰ সংজ্ঞা দিয়া আৰু fragments সম্পৰ্কে ব্যাখ্যা কৰা।

- (g) Describe the types of permissions used while developing android applications.

Android applications develop কৰিবলৈ দৰকাৰী অনুমতি বোৰৰ ব্যাখ্যা লিখা।

- (h) Write android code to build a GUI for student table with 5 records. Write queries to add, delete and view the records from the SQLite databases.

৫ তথ্য সহ ছাত্রতালিকাৰ এটা GUI বনাবলৈ android code লিখা। SQLite database ৰ লগত record add, delete আৰু view কৰিবলৈ queries লিখা।

OPTION - E

(PHP Programming)

Paper : CSC-SE-4054

1×4=4

1. Fill in the blank : **(any four)**

- (a) PHP stands for _____.
- (b) '=' is an _____ operator in PHP.
- (c) The extension of PHP files is _____.
- (d) PHP is an _____ language.
- (e) PHP is a _____ scripting language.
- (f) PHP supports the database _____.
- (g) Local server _____ is compatible with PHP.
- (h) PHP files are executed on the _____.

2. Answer the following question as directed : **(any three)** 2×3=6

- (a) What is array in PHP ? Give an example.
- (b) Write *any two* features of PHP.
- (c) What is ternary operator in PHP?

Contd.

(d) What do you mean by keywords in PHP? Give example.

(e) Define string and variable in PHP.

(f) What are different binary operators in PHP?

3. Answer the following questions as directed :
(any two)

$$5 \times 2 = 10$$

(a) Write a PHP program to find factorial of input integer number.

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

(c) Explain the categories of variable scope in PHP.

(d) Explain any five PHP string functions.

(e) Explain how while loop differs from do-while loop in PHP.

(f) What is PHP function? Write a PHP function to find maximum value of any two input numbers.

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

(a) Write a PHP program to find sum of n input numbers using array.

(b) Write a PHP function to find Fibonacci series of n terms.

(c) Explain the PHP switch statement with suitable example.

(d) Write a PHP script to find the length of any input string.

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

(f) Write a PHP program to sort the name list of any five students alphabetically.

(g) What is PHP operators? Explain different types of PHP operators with examples.

(h) Write a PHP program to find the smallest number of any n input numbers.