



Sri Lanka Institute of Information Technology

B.Sc. Honours Degree in Information Technology

Final Examination
Year 1, Semester 2 (2022)
June Intake

IT1100 – Internet and Web Technologies

Duration: 2 Hours

Instructions to Candidates:

- ◆ This paper has 3 questions.
- ◆ Answer all the questions.
- ◆ The total mark for the paper is 100.
- ◆ This paper contains 6 pages, including the cover page.
- ◆ Electronic devices capable of storing and retrieving text, including calculators and mobile phones are not allowed.

Question 01**(20 Marks)**

- a) You are asked to create a web-based system to maintain the internal human resource management for a single branched Textile factory with 300 employees. Select the most suitable software/network requirement from the list below(I-IV). Explain your selections.

- i. static or dynamic system
- ii. website or web application
- iii. development languages/database
- iv. network (LAN, WAN)

(08 marks)

- b) Identify the most suitable e-commerce category for the given scenarios (I-IV) below

- i. Purchasing bulk clothes from AliExprees to resell on online store B2B
- ii. Purchasing furniture from a thrift store B2C
- iii. Sell organic vegetables online C2C
- iv. Order a custom-made cake online for a birthday party C2C

(02 marks)

- c) Identify the attack type for the given list (I-IV)

- i. Any attack targeting the availability or stability of a network's DNS service
- ii. Malicious scripts are injected into otherwise benign and trusted websites
- iii. Shut down a machine or network, making it inaccessible to its intended users
- iv. Use of malicious SQL code for backend database manipulation to access information that was not intended to be displayed

(04 marks)

- d) Illustrate and briefly explain private key encryption.

(06 marks)

Question 02**(20 Marks)**

Following student's details and mark ranges are given

Table 1: Students details

Student Name	Mark
Uthpala	80
Meena	92
Abdhul	85
Sahan	50
Teena	65

Table 2: Mark Ranges

Range	Grade
<60	F
<70	D
<80	C
<90	B
<100	A

- a) Write a PHP program to display the Corresponding grades of each student given in Table 1 according to the following output format. (Hint: store students mark in associate array)

Output: "Congratulation Uthpala , You got 80 marks and your grade is B ."

Congratulations Meena , You got 92 marks and your grade is A."

.....

"Try harder Sahan , you got 50 marks and you Fail the module."

(04 marks)

- b) Consider the following interface used to calculate the volume of a Cone using javascript DOM eventlistener.

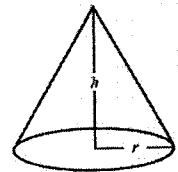
Input radius and height , get the volume of a cone.

Radius

Height

Volume

$$V = (1/3)\pi r^2 h$$



User can input radius, height and click on "Calculate" button. Then the volume should be calculated and display in the text box under volume label. **Write the complete code (html form and DOM eventlistener)**

(hint: volume= (1/3) * Math.PI * Math.pow(radius, 2)*height;

(08 marks)

- c) In number theory, a perfect number is a positive integer equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself.

Example: The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors, and $1 + 2 + 3 = 6$. Next perfect number is $28 = 1 + 2 + 4 + 7 + 14$. This is followed by the perfect numbers 496 and 8128.

Write a JavaScript function that says whether a number is perfect.

(08 marks)

Question 03**(60 Marks)**

Nanasara books has an online web portal to manage their books, Where the Nanasara staff can add, update, edit and delete book information. They used PHP and MYSQL to develop the backend of the web portal.

Figure 01: shows the addBook.php , which is used to add new books to the system.

Table 03: shows the category table, drop down values on the category comes from that table.

Publication year should be between 2001 – 2021 range.

Following information is also given.

Server =<http://nanasara.lk>

User =admin Password=admin@ne#231

Database=book_db

Add Book Information

Name of the book :

Category : Action and Adventure. ▼

Image to upload: No file chosen

Stock Availability: ☐ Yes ☐ No

Available stores: ☐ Colombo 05 ☐ Colombo 04 ☒ Colombo 03

Publication Year : 2021 ▼

Price :

Category : Action and Adventure. ▼

Image to upload: No file chosen

Book's Description:

Figure 01: addBook.php

Table 03: Category Table

Cat_id	Name
1	Action and Adventure
2	Classics
3	Detective and Mystery
4	History
5	Comics
6	Literacy Fiction

a) Follow the steps(i-iii) below and construct PHP/HTML code (“addProduct.php”) to display above form. Use an appropriate form method and action should be a self-submission.

- i. Write configuration file to create connection object (04 marks)
- ii. Import config file to addProduct.php page and complete the form (12 marks)
- iii. Collect form data using PHP and write a query to add data to the database table “bookdetails” shown in Table 04. Image should be uploaded to the folder named “uploads/productImages”

Table 04: Structure of book details




1d	1
catId	001
name	Life of PI
Image url	Uploads/productImages/life_of_pie.png
stock	1
published year	2001
stores	Colombo 4 , Colombo 3
price	Rs:2850.00

(15 marks)

b) Complete a PHP file “**display_books.php**” and display records available in table “**bookdetails**”. (according to the sample output given below in Figure-02)

(15 marks)

Figure 02: Display book details
Book List

name	Category	Image	Year	Stores	Price	
Congo	Action and Adventure		2020	yes	rs.2400.00	delete
Life of Pi	Action and Adventure		2020	yes	rs.1950.00	delete
To kill a mocking bird	Classics		2018	no	rs.3650.00	delete

c) Create a cookie to save user session name admin_user, lifetime of it should be 3 (three) months. (04 marks)

d) Explain the advantage of using social media integration instead of traditional user login. (04 marks)

e) As a software engineer how can you make your web application a search engine friendly one. (06 marks)

-End of the Question Paper-