FEDERAL BOARD OF INTERMEDIATE AND SECONDARY EDUCATION

H-8/4, ISLAMABAD

INTER-TECH

ASSESSMENT MANUAL FOR
CLOUD COMPUTING FUNDAMENTALS
HSSC-I

FEDERAL BOARD OF INTERMEDIATE AND SECONDARY EDUCATION

H-8/4, ISLAMABAD

IoT & Data Coding

Scheme of Studies 2024

CLOUD COMPUTING FUNDAMENTALS

Purpose:

- This **Assessment Manual to** ensures **standardized marking** for all students.
- Faculty can simply **tick/check and assign marks** during exams.
- Students know **exactly what is expected** from them.
- This format provides **clarity, fairness, and transparency** for both faculty and students.

Section I – Theory Paper Assessment (40%-40 Marks)

Component	Criteria	Max Marks	Marks Obtained
MCQs (20%)	Knowledge recall, basic concepts	8	
Short Answer Questions (50%)	Comprehension, application, clarity	20	
Long Essay / Analytical- based (30%)	Depth of understanding, analysis, Clarity of subject.	12	
Total Theory		40	

Section II – Practical Assessment (60%- 60 Marks)

A. Projects/Portfolios (30%- 30 Marks)

Criteria	Max Marks	Marks Obtained
Practical Task Execution (Hardware setup, sensor/actuator interfacing, and correct circuit connections): Accuracy, functionality, and safety.	2Qx15=30	
Programming & Application (Correct code writing/uploading, successful execution, basic data display using dashboard/widgets, and explanation of visualization tools): Accuracy, completeness, and presentation**.**		
General Evaluation: Completeness of Portfolio/manual, Neatness, Organized, timely submission, Accuracy & Correctness **In the view of above portfolio Two Questions will be assigned from the Experiments/Practicals list. Students will attempt both questions. Each question carries 15 marks.**		
Total	30	

- External Examiner reserves the right to select any two question (practical's/Experiments) from the attached list to evaluate the candidate performance as required by the FBISE examination criteria.

Verification Level: Subject Teacher/Instructor and HOD/Principal with Name, Signature & Stamp. Countersigned by the external examiner.

Marking: Marks shall be awarded by the External Examiner.

B. Viva Voce (10%-10 Marks)

Criteria	Max marks	Marks Obtained
Theory-based Questions (knowledge of IoT concepts, hardware, software, tools, and communication technologies)	**5Qx2=10**	
Scenario-based Questions *(*questions related to IoT project implementation, problem identification, sensor selection, data flow, and application area)		
Total Viva	**10**	
Note: Only five questions will be asked. No additional question is allowed		

C. Hands-on Practical Skills (20%-20 Marks)

Criteria	Max Marks	Marks Obtained
Portfolio: It comprises of correct setup and operation of IoT hardware with accurate program execution, successful connectivity, data monitoring, and clear demonstration of system functionality. **Note:** Teacher will observe the hands on skill during the performance of experiment	20	
Total	20	

NOTE:

- Hands-on Practical skills/Experimental skills marks will be awarded as per candidate performance by the External Examiner.

D. Time Duration for Practical (03 Hours)

Final Summary of Assessment

Component	Max Marks	Marks Obtained
Section I: Theory Paper Assessment	40	
Grand Total	40	
Section II: Practical Assessment		
Projects/portfolio	30	
Viva	10	
Hands-on practical Skills	20	
Grand Total	60	

1. External Examiner

To ensure transparency, reliability and validity. Students will be evaluated by a qualified external examiner.

Responsibilities:

- Oversees the **entire practical exam process**.
- Ensures exams are conducted **according to policy**.
- Countersigned by the external examiner.
- Evaluates **hands-on practical skills**.
- Signs off on the **final mark sheets**.
- Maintains fairness and addresses student/examiner issues if they arise.
- Viva voce questions may be asked as per above mentioned policy.
- Special attention may be given to the availability of the lab equipment relevant to projects

2. Supporting Staff (Internal)

Lab Assistant and attendant

- Prepares lab/, equipment.
- Assist external examiner in maintaining of Projects/portfolio folders.

Lab attendant

- Serve external examiners.
- Assist lab assistant in preparation of labs.

CLOUD COMPUTING FUNDAMENTALS

LIST EXPERIMENTS/PRACTICALS

Project/Portfolio	Actions / Activities / Practicals	Description
Introduction to Cloud Computing Tools	1. Create and organize digital workspaces using cloud-based tools. 2. Understand basic cloud computing concepts through demonstrations. 3. Identify common cloud services used in daily life.	Understand cloud computing fundamentals, recognize cloud services, and gain practical exposure to cloud-based environments.
Cloud-based Productivity & Collaboration Tools	4. Use Notion to create workspaces, task lists, and project boards. 5. Collaborate using comments and shared documents. 6. Design posters and graphics using Canva. 7. Apply templates and layouts. 8. Create collaborative presentations using Pitch. 9. Apply interactive presentation elements.	Learn cloud productivity, collaboration, digital content creation, and presentation design.
Communication & File Sharing Applications	10. Create workspaces in Slack/Discord. 11. Manage channels and roles. 12. Share files and communicate. 13. Upload/share files using Dropbox/WeTransfer. 14. Manage shared links.	Practice cloud communication, collaboration, and file sharing.
Serverless & PaaS Platforms	15. Explore Replit, Supabase, and Firebase. 16. Create HTML pages. 17. Style pages using CSS. 18. Add JavaScript interactivity.	Gain introductory experience with PaaS, serverless platforms, and web development.
Final Project	19. Develop a cloud-based Task Manager. 20. Create a front-end interface. 21. Store/retrieve data using a cloud database. 22. Implement add/update/delete tasks. 23. Demonstrate scalability.	Integrate cloud services, databases, and web technologies into a practical project.

CLOUD COMPUTING FUNDAMENTALS
PRACTICAL MODEL PAPER
HSSC-I

Time allowed: 3:00 Hours **Total Marks :30**

Note: Attempt the following Questions

Q.1 Perform Cloud Productivity and Collaboration Tasks: **15 Marks**

i. Create a workspace in **Notion** and add a task list or simple project board. **(4 Marks)**

ii. Design a simple poster or banner using **Canva** by applying a suitable template, layout, and color scheme. **(4 Marks)**

iii. Create a collaborative presentation with **Pitch** consisting of at least three slides. **(4 Marks)**

iv. Explain the purpose of each cloud tool (Notion, Canva, and Pitch) and identify Its cloud service model (SaaS). **(3 Marks)**

Q.2 Develop a Simple Cloud-based Task Manager: **15 Marks**

i. Create a basic web page using **HTML** and **CSS** for a Task Manager interface. **(4 Marks)**

ii. Demonstrate adding, updating, and deleting tasks using **basic JavaScript**. **(5 Marks)**

iii. Explain how task data can be stored and retrieved using a cloud database (introductory level using Supabase/Firebase). **(3 Marks)**

iv. Explain how the application can scale to support multiple users using cloud computing concepts. **(3 Marks)**

Note: Marks will be awarded as per candidate's performance by the External Examiner, including practical knowledge, communication, confidence, and presentation skills.