Grade 9 Computer, Explained

Final Exam Model Paper 3

MODEL PAPER

Full marks 50 · 2 hours

Name _____ Class _____ Roll no. ____ Date _____ Marks _____ / 50

All questions are compulsory. Time: 2 hours.

A practice paper by Science Playground, made to CDC's Specification Grid, Computer Science, Grade 9 (2082); not an official CDC or exam board paper. Mark it yourself online: the QR code below opens the paper with its answers.

A full practice run of the Grade 9 final exam's Computer Science theory paper: 50 marks in 2 hours, every question compulsory. Work out on paper what each program in a question does, as in the exam hall: those programs have no Run button. The programs in the answers do run.

Group A

10 × 1 = 10

Choose the correct answer for each of the following questions.

1. Which part of the CPU controls and coordinates the working of every part of the computer?

(i) the control unit (CU) (ii) the arithmetic logic unit (ALU)
(iii) the registers (iv) the hard disk

2. Deepak wants to copy songs of 6 MB each onto a blank CD that holds 700 MB. How many whole songs will fit?

(i) 116 (ii) 117 (iii) 120 (iv) 4,200

3. A ward office in Itahari prints hundreds of pages of black-and-white letters and reports every day. It needs the pages quickly, crisp and quiet. Which printer is the best choice?

(i) a laser printer (ii) an inkjet printer
(iii) a dot-matrix printer (iv) a 3D printer

4. Which small programmable board has a 5 × 5 matrix of LEDs, buttons A and B, and sensors for light and temperature?

(i) the micro:bit (ii) the Arduino UNO (iii) a motherboard (iv) a pen drive

5. A momo shop in Lalitpur takes orders on its website. Which of these is part of the website's **back end**?

(i) the Order now button on the page
(ii) the colors and fonts set by its CSS
(iii) the database on the server that stores the orders
(iv) the photos of momos on the menu page

6. How does a browser show this line of HTML?

```
<p>H<sub>2</sub>O and 10<sup>3</sup></p>
```

(i) H20 and 103 (ii) H_2O and 10^3 (iii) H^2O and 10_3 (iv) H_2O and 10_3

7. Who invented the World Wide Web?

(i) Bill Gates (ii) Tim Berners-Lee (iii) Charles Babbage (iv) Guido van Rossum

8. Junu is in a café in Thamel and connects her phone to its free, open Wi-Fi. What is the safest way for her to use it?

(i) Log in to her mobile banking on any page, since the café is a busy, known place.
(ii) Open only pages whose address starts with https, read the domain before typing anything, and leave banking for a trusted connection or a trusted VPN.
(iii) Switch off her phone's firewall so that the Wi-Fi works faster.
(iv) Turn on incognito mode, which hides what she does from the café's network.

9. Which symbol starts a comment in Python?

(i) `//` (ii) `#` (iii) `/*` (iv) `--`

10. Which numbers does this program print?

```
for i in range(1, 10, 3):
    print(i)
```

(i) 1, 3, 5, 7, 9 (ii) 1, 4, 7 (iii) 1, 4, 7, 10 (iv) 3, 6, 9

Group B

10 × 2 = 20

Write short answers to the following questions.

11. Write any two differences between a hard disk drive (HDD) and a solid state drive (SSD). **[2]**

12. Is each of these packaged software or customized software? Give a reason for each. **[2]**

a. LibreOffice Writer, used in a school to type notices. (1)

b. The program a savings cooperative in Gulmi had made to keep its members' savings and loans. (1)

13. Convert as indicated. **[2]**

a. $(1011011)_2$ into hexadecimal (1)

b. $(AB)_{16}$ into decimal (1)

14. Perform the following binary operations. **[2]**

a. $(10110)_2 + (1111)_2$ (1)

b. $(100011)_2 - (1101)_2$ (1)

15. Sonam is making a web page about her village in Mustang. Write an HTML page with **internal CSS** that makes every level-1 heading green and centered, and the text of every paragraph 18px in size. **[2]**

16. What is a search engine? How do the results of the search `momo recipe -chicken` differ from those of `momo recipe`? **[2]**

17. Your class will have its science lessons on Google Meet for a week during the winter break. Your teacher asks you to suggest rules for the online class. Suggest any two rules, with a reason for each. **[2]**

18. What is a flowchart? Name the symbols used for a decision and for input or output. **[2]**

19. Bibek's program finds the highest common factor (HCF) of two numbers by subtracting. Write its output and show it in a dry-run table. **[2]**

```
a = 24
b = 36
while a != b:
    if a > b:
        a = a - b
    else:
        b = b - a
print("HCF:", a)
```

20. In Sapana's school, three students sit on one bench. Write a Python program that asks for the number of students in a class and displays the number of benches needed. (A class of 40 needs 14 benches: 13 full benches and one more for the last student.) **[2]**

Group C

5 × 4 = 20

Write long answers to the following questions.

21. What is a computer? Explain any three features of a computer. [1+3] **[4]**

22. Arrange the blocks so that, when the green flag is clicked, the sprite walks round a square: it moves 100 steps and turns 90 degrees, four times. **[4]**



Figure 1 Four Scratch blocks, numbered in a jumbled order.

23. Srijana's family runs a homestay in Bandipur. Write the HTML code to create the web page shown below. Its heading is green and centered with **inline CSS**, and the link opens an email to `stay@example.com`. **[4]**

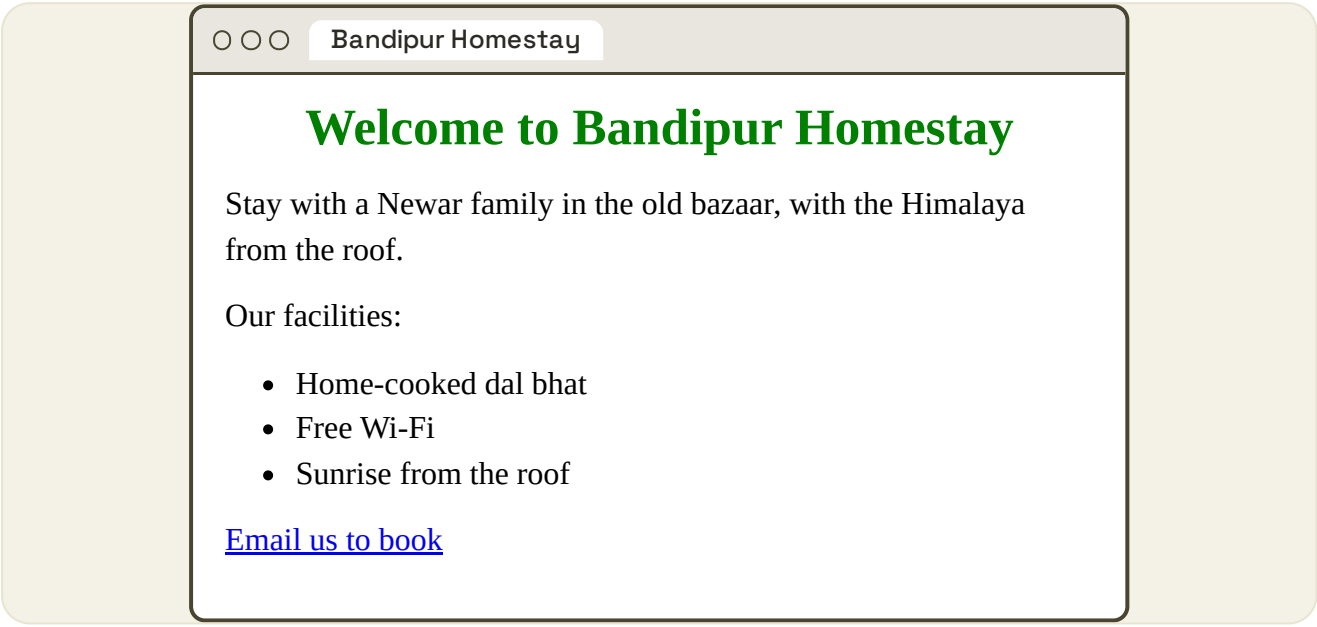


Figure 3 The homestay's web page, as a browser shows it.

24. What is cybersecurity? Explain any three methods of preventing cybercrime. [1+3] **[4]**

25. Hema, a weather volunteer in Pokhara, wrote down the rainfall of one week in July, in millimeters: 12, 65, 30, 80, 0, 55 and 20. Write a Python program that stores the week's rainfall in a list, and displays the total rainfall of the week, the highest rainfall in a day, and the number of days with more than 50 mm. **[4]**