


CREST Cyber Olympiad (CCO)

Sample Paper

Pattern and Marking Scheme

Grade	Topic/Section	No. of Questions	Marks per Question	Total marks
Grade 7	Computer & IT	40	1	40
	Achiever's Section	10	2	20
Grand Total		50		60

The total duration of the exam is 60 minutes.

Syllabus

Section 1: Computer & IT

1. Computer

- Hardware and Software
- Memory and Storage
- Computer Language 0 & 1
- Compiler & Interpreter
- Data Types (Integer, Float or Decimal, String, Boolean, Character (Char))

2. MS Word

- Layout: Page Setup, Arrange and Paragraph
- Mailing: Create (Envelopes, labels), Start Mail Merge (Start Mail Merge, Letter, E-Mail Messages and Envelope), Write & insert Fields(Highlight Merge Fields, Insert Merge Field, Address Block, Greeting line), Preview Results, Finish
- Marcos
- Track Changes and Reviewing Tools: Comparing and merging documents using the "Compare" feature, version history
- Collaboration Features: real-time co-authoring, tracking edits, and editing permissions with MS Word Online

3. MS PowerPoint

- Advanced graphic design with gradient fills, shadows, and 3D effects
- Layering text, images, and shapes for more dynamic slide designs
- Interactive Presentations: Using action buttons to control presentations dynamically (e.g., jump to specific slides)
- Advanced Animation: advanced animation techniques, including entrance, emphasis, exit effects, and motion paths and adjusting animation timings and sequencing for professional effects
- Collaborative Features: Using MS PowerPoint Online for real-time collaboration and editing with others sharing and exporting presentations as PDFs, videos, or hyperlinks

4. MS Excel

- Logical functions (IF, AND, OR, NOT, TRUE, and FALSE) to perform complex calculations
- Functions: VLOOKUP, CONCATENATE, INDEX, MATCH, IFERROR, SUMIFS, FILTER, TEXTJOIN, UNIQUE, COUNTIFS
- Data Validation and Conditional Formatting: Setting up data validation to restrict data entry and create drop-down lists, advanced conditional formatting for dynamic, rule-based formatting
- Macros

5. Photoshop Introduction

- DTP and its software
- Starting Photoshop (How to create a new file, save it, save an existing file)
- Using Layers (Learning Layer Basics, Using Layers palette, Renaming Layers, Applying a Layer Style)
- Tools in Photoshop: Flattening, Rectangular Marquee, Single column Marquee, Single Row Marquee, Lasso (Polygonal Lasso, Magnetic Lasso, Quick Selection, Magic Wand), Crop and Slice tools (Crop, Slice, Slice Select), Measuring tools (Eyedropper, Colour Sampler, Ruler, Note, Count)

6. Programming with Scratch

- Blocks (Motion Blocks, Looks Blocks, Events Blocks, Sound Blocks, Control Blocks)
- Making a Scratch Project (Naming a Project, Deleting a Sprite, Adding a Sprite, Positioning a Sprite, Moving a Sprite, Pen Extension, Drawing a Line, Saving a Scratch Project, Opening an Existing Scratch Project)
- Drawing Shapes (Drawing a Square, Drawing a Circle)
- Drawing a Pattern (Rotating a Sprite, Creating a Clone, Drawing a Pattern, Creating a Blank Sprite, Drawing a Pattern)

7. Introduction to Web Development

- How websites are built: HTML + CSS + JavaScript
- Basic rule of Web development: start with `<!DOCTYPE html>`, opening `<tag>` and closing `</tag>` pairs, Don't forget to close tags
- Introduction to CSS: Change colours, Change fonts, Resize text and images, Add spacing, borders, and backgrounds, Arrange things neatly on the page
- Types of tag (`<HTML>`, `<head>`, `<body>`, `<h1>` to `<h6>`, `<p>`, `<div>`, `
`, ``, `<i>`, ``, `<a>`)

8. Networking

- Working of DNS, URL Structure
- Bandwidth control, Network speed, servers, Hubs
- Introduction to IP VPNs & Proxies
- Cloud Computing: SaaS, IaaS, PaaS
- IPv4 vs. IPv6 (basic comparison)
- Firewalls & Network Security Basics
- Mailing

9. Cyber Security and Cyber Ethics

- Encryption and Decryption
- Firewalls, IP Address and VPNs
- Cyber Ethics [Digital Piracy, Plagiarism, Digital Footprint Awareness, Fake News and Misleading Content, Cyber Laws (Introductory Level)]
- Safe Social Media Practices

10. Latest Developments in the Field of IT

- AI in Human Intelligence
- IOT
- Edge Computing

Section 2: Achievers Section

Higher Order Thinking Questions - Syllabus as per Section 1.

Questions are based on Windows 11 and MS Office 2016.

For more details, visit <https://www.crestolympiads.com/cyber-olympiad-cco>

Computer & IT (Each Question is 1 Mark)

- Fill in the blank:
In computing, a _____ is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules.
 - Wi-Fi Card
 - router
 - firewall
 - virus
- Fill in the blank:
_____ memory is directly accessed by the CPU.
 - ROM
 - Flash
 - RAM
 - SSD
- In binary, what is the decimal equivalent of 1010?
 - 10
 - 8
 - 12
 - 6
- Which of the following is TRUE about a compiler?
 - It translates as the program runs
 - It needs internet to work
 - It shows all errors before execution
 - It skips syntax errors
- Which of the following would be best stored using a float data type?
 - Person's age
 - Price of a product
 - Number of students
 - Zip code
- Which of the following is true about decryption?
 - It changes data into an image
 - It requires the original encryption key
 - It makes data unreadable
 - It is only needed for email communication
- Why do schools install firewalls on their networks?
 - Boost internet speed
 - Show ads
 - Prevent misuse of internet
 - Track marks
- What role does the government play in cyber laws?
 - Monitoring online activity
 - Passing laws that regulate internet activity
 - Protecting personal data
 - All of the above
- What does it mean if someone asks you to 'DM' them after a public comment?
 - They want a public shoutout
 - They want a private conversation
 - They want to be blocked
 - They need help with login

10. Which data type would a smart fridge use to decide if a food item has expired?
- a. Yes/No
 - b. Number
 - c. Word
 - d. Symbol
11. What happens if a loop is written without an exit condition in a real-world program?
- a. It runs once and stops
 - b. It skips execution
 - c. It runs forever
 - d. It gives an error immediately
12. In Scratch, which block would help you simulate decision-making similar to a coin toss?
- a. If then say 'Heads' else say 'Tails'
 - b. Repeat 2 times: say 'Heads'
 - c. Pick random 1 to 2, then say result
 - d. Say 'Heads' then 'Tails'
13. What's the best way to show 'Level Up!' if points reach exactly 100?
- a. If then say 'Level Up!'
 - b. Repeat until: say 'Level Up!'
 - c. Say 'Level Up!' when points reach 100
 - d. If then say 'Level Up'
14. Which file extension is used for CSS files?
- a. .js
 - b. .html
 - c. .css
 - d. .txt
15. Why is indentation important in HTML and CSS files?
- a. It makes the site run faster
 - b. It prevents syntax errors
 - c. It helps readability and structure
 - d. It creates animations
16. What does the <body> tag contain?
- a. CSS styles
 - b. Visible page content
 - c. JavaScript logic
 - d. Site icons
17. Which CSS unit is best to change the size of text?
- a. px
 - b. kg
 - c. cm
 - d. sec
18. Fill in the blank:
The _____ tool is used to remove unwanted parts of an image.
- a. Crop
 - b. Eraser
 - c. Lasso
 - d. Paint Bucket
19. What is the purpose of Ctrl + Shift + S in Photoshop?
- a. Save a copy with new name
 - b. Close file
 - c. Open toolbox
 - d. Create new layer

- 20.** Which layer is edited when you have multiple layers?
- a. The one at the bottom
 - b. All layers together
 - c. The background only
 - d. The selected layer
- 21.** Which Lasso tool sticks to the edges of objects as you move your mouse?
- a. Magnetic Lasso Tool
 - b. Magic Wand Tool
 - c. Polygonal Lasso Tool
 - d. Brush Tool
- 22.** Which task is best performed by humans rather than AI?
- a. Calculating large numbers
 - b. Feel emotions
 - c. Searching the web
 - d. Sorting data
- 23.** Consider the following statements:
1. AI can not have feelings.
 2. AI can feel love and anger.
- Which is true?
- a. Only 1
 - b. Only 2
 - c. Both are true
 - d. Both are false
- 24.** Which of the following helps an IoT device collect data?
- a. Microwave
 - b. Database
 - c. Sensor
 - d. Electricity
- 25.** What kind of data does edge computing handle well?
- a. Highly sensitive financial data
 - b. Very old data
 - c. Archived data
 - d. Real-time
- 26.** What can you assign to a macro in MS Word?
- a. A key combination
 - b. A toolbar button
 - c. A menu item
 - d. All of the above
- 27.** In MS Word, how can you merge changes from two different documents?
- a. Using the 'Track Changes' tool
 - b. Using the 'Compare' feature
 - c. Using 'Find'
 - d. Using 'Page Layout'
- 28.** What happens when multiple users are editing a document simultaneously in MS Word Online?
- a. They all get blocked out until one user finishes
 - b. Only one user can edit at a time
 - c. The document is locked for everyone else
 - d. Changes by different users are highlighted

29. Which command helps align objects relative to each other?
- a. Send to Back
 - b. Align Top
 - c. Group
 - d. Distribute Horizontally
30. Which type of fill transitions smoothly between colours?
- a. Gradient fill
 - b. Pattern fill
 - c. Solid fill
 - d. Texture fill
31. Which pane helps to rearrange object layers easily?
- a. Outline Pane
 - b. Selection Pane
 - c. Review Pane
 - d. Slide Sorter
32. What does the 'Duration' setting control in PowerPoint animations?
- a. Play time of animation
 - b. The delay after animation starts
 - c. The speed of animation
 - d. The order of animation
33. Which format is best if you want others to **only view** the presentation and not edit it?
- a. PPTX file
 - b. Hyperlink
 - c. PDF
 - d. Make it Offline
34. Which Excel logical function is used to reverse the result of a condition?
- a. AND
 - b. OR
 - c. NOT
 - d. IF
35. Fill in the blank:
COUNTIFS counts the number of cells that meet _____ conditions.
- a. One
 - b. Two
 - c. Multiple
 - d. Three
36. Fill in the blank:
The _____ rule in conditional formatting applies a different format to cells based on the highest or lowest values.
- a. Top/Bottom Rules
 - b. Data Bars
 - c. Icon Sets
 - d. Colour Scales
37. What does the 'Error Alert' in data validation do?
- a. It provides a message when invalid data is entered
 - b. It restricts data entry
 - c. It formats cells
 - d. It removes duplicate entries

38. Which of these is NOT an example of a network topology?

- a. Bus
- b. Tree
- c. Socket
- d. Ring

39. What does SaaS stand for?

- a. Software as a Service
- b. Security as a Service
- c. Service as a Software
- d. System as a Service

40. Which version of IP uses a 128-bit address?

- a. IPv4
- b. IPv5
- c. IPv6
- d. None

Achiever's Section (Each Question is 2 Marks)

41. Rio ran a code in BASIC. It showed an output for the first few lines but stopped when it reached an error. What was used?

- a. Compiler
- b. Assembler
- c. Interpreter
- d. Debugger

42. Which is a valid string literal?

- a. "Name"
- b. Name'
- c. Name
- d. N'

43. Which method do hackers most commonly use to break encryption?

- a. By guessing the encryption key
- b. By breaking the encryption algorithm
- c. By intercepting the message
- d. By using legal methods

44. Which block best helps create an endless background scroll affect?

- a. change backdrop to [next]
- b. move 10 steps + if on edge, bounce
- c. change x by -10 + if x <-240 then set x to 240
- d. switch costume to [bg]

45. Why are closing tags important in HTML?

- a. They define links
- b. They apply styles
- c. They end an element correctly
- d. They show page title

46. What does the 'Keep lines together' paragraph setting do?

- a. Align text
- b. Moves to next page
- c. Keeps all lines on the same page
- d. Increase Indent

47. If you increase the duration of a motion path, what will happen?

- a. The object disappears instantly
- b. The movement becomes slower
- c. The object rotates
- d. The text becomes bolder

48. Which option in Excel's conditional formatting feature highlights cells based on specific text?

- a. Text that contains
- b. Top 10 items
- c. Data Bars
- d. Icon Sets

49. Which of the following issues could cause a DNS server to fail?

- a. High bandwidth
- b. Incorrect DNS settings
- c. Valid domain names
- d. Correct server connection

50. Fill in the blank:

IaaS provides computing resources like servers, storage, and networking, allowing users to manage applications, data, and operating systems. It is often referred to as _____.

- a. Cloud Platform
- b. Virtual Infrastructure
- c. Cloud Service
- d. Virtual Machine

Answer Key

1.	c	2.	c	3.	a	4.	c	5.	b	6.	b	7.	c
8.	d	9.	b	10.	a	11.	c	12.	a	13.	a	14.	c
15.	c	16.	b	17.	a	18.	a	19.	a	20.	d	21.	a
22.	b	23.	a	24.	c	25.	d	26.	d	27.	b	28.	d
29.	d	30.	a	31.	b	32.	a	33.	c	34.	c	35.	c
36.	a	37.	a	38.	c	39.	a	40.	c	41.	c	42.	a
43.	a	44.	c	45.	c	46.	c	47.	b	48.	a	49.	b
50.	b												