


CREST Cyber Olympiad (CCO)

Sample Paper

Pattern and Marking Scheme

Grade	Topic/Section	No. of Questions	Marks per Question	Total marks
Grade 8	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. Algorithms and Flowcharts

- Computational Thinking
- Flowchart Symbols: Oval (Start/End), Rectangle (Process/Task), Diamond (Decision/Condition), Arrow (Flow of control)
- Rules for creating flowcharts: Begin with "Start" and end with "Stop.", Use arrows to connect symbols, Decisions lead to different paths
- Algorithms vs Flowcharts

2. Introduction to Canva

- Introduction to Canva Interface: Understanding dashboard: templates, projects, folders; How to create a new design; Drag-and-drop functionality; Difference between free and premium elements
- Design Basics: What makes a good design (contrast, alignment, balance); Choosing the right color combinations (Color Theory basics); Using white space effectively; Choosing appropriate fonts for different purposes
- Typography Skills: Font pairing, Font size and hierarchy, Text alignment and spacing, Making titles stand out
- What can we do on Canva: Creating Social Media Posts and Academic Posters, Creative Writing Integration, Presentation Design, Infographics, Collaborative Projects
- Video Editing with Canva: Making short videos or reels, Adding text, stickers, and music, Trimming clips and arranging scenes

3. Latest Developments in the Field of IT

- Human-Computer Interaction: GUI, CLI, Touch, Voice, Gesture-based
- Emerging Technologies: IoT, Blockchain, Quantum Computing

4. MS Access

- Types of Queries
- Creating a Query
- Sorting Data in Query
- Creating a Report

5. MS Excel

- Using statistical functions like MEDIAN, and CORREL to analyze data
- Working with large data sets using Excel's "Text to Columns" tool and "Remove Duplicates"
- Leveraging advanced formulas, including nested IF functions and array formulas
- Data Visualization: Creating dynamic and interactive dashboards with PivotTables, PivotCharts, and slicers, Designing and customizing advanced charts (e.g., radar, bubble, 3D charts, and combo charts), Formatting and modifying charts (color themes, axis options, legends, and data labels)
- Conditional Formatting: Applying complex rules and color scales to visualize data trends and anomalies, using formulas for custom conditional formatting (e.g., highlighting top 10% values)
- Data Validation and Protection: Creating drop-down lists and restricting data entry using data validation rules, Protecting sheets and ranges to prevent accidental edits and restricting access
- Power Query and Power Pivot: Using Power Query to import, clean, and transform data from various sources (Excel files, web, databases), Building data models in Power Pivot to analyze large volumes of data and create relationships between tables
- Automation with Macros: Recording, editing, and debugging macros to automate repetitive tasks, Using VBA (Visual Basic for Applications) to write custom automation scripts for complex tasks

6. MS PowerPoint

- Customizing design elements (backgrounds, color palettes, fonts) for cohesive presentations
- Inserting and customizing vector graphics, icons, and images to enhance visual appeal
- Advanced Transitions and Animations: Applying complex animations to text and objects (motion paths, emphasis, fade effects), customizing animation timing, triggers, and sequencing for sophisticated presentations, using transitions creatively to control how slides appear and leave the screen
- Multimedia Integration: Embedding and editing multimedia elements like videos, audio, and interactive elements, using hyperlinks to create interactive, non-linear presentations (e.g., branching to specific slides)
- Data Visualization in Presentations: Inserting advanced charts, tables, and SmartArt into slides to represent data effectively, using PowerPoint "Design Ideas" feature to suggest layout options based on content automatically
- Collaboration and Sharing: Collaborating on presentations with peers in real-time, using comments and live editing, exporting presentations to video format or as PDFs for easy sharing

7. MS Word

- Using multi-level lists for organizing information and hierarchies
- Section breaks to control page layouts and formatting across different sections
- Inserting and customizing footnotes, endnotes, and citations for academic writing
- Advanced formatting for headers and footers, including adding chapter titles, document properties, and automatic updates

- Advanced Styles and Themes: Customizing and saving styles for headings, paragraphs, citations, modifying themes for consistent formatting in long documents
- Working with Tables: Inserting and formatting complex tables, including sorting and merging cells, using formulas within tables to perform simple calculations
- Track Changes: Reviewing documents by accepting/rejecting changes, and using comments for feedback
- Document Protection and Security: Adding password protection and restricting editing options and Creating forms and fields for data collection with Word content controls

8. Network and communication

- E-commerce and Online Transactions: E-commerce Types (B2B, B2C, C2C), Online Payment Systems
- Blogging
- Emerging Technologies in Communication: 5G Networks and IoT (Internet of Things), Cloud Computing, Artificial Intelligence in Communication
- Modes of communication in data transmission

9. Operating Systems & GUI

- Functions: Process management, memory management, file system management, and device management.
- Single-user vs. Multi-user.
- User interface (GUI vs CLI)
- Navigating a basic OS (e.g., Windows).
- Using UI
- Fundamentals of Computer

10. Programming

- Introduction to Python
- Character Set
- Tokens
- Comments
- Statements
- Data Types
- Variables
- Defining Input and Output in Python
- Error Handling
- Programs in Python

11. Web Development

- Introduction to forms: <form>, <input>, <button>, <label>
- Types of input fields: text, password, email, etc
- Embedding audio and video on a webpage using <audio> and <video>
- Cascading Style Sheets (CSS)
- Creating navigation menus with <nav> and links (<a> tag)
- Styling navigation menus using CSS (horizontal and vertical menus)

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)

1. Whenever there is a requirement of an immediate attention by a peripheral device from the OS, which of the following does it generates?

- a. Interrupt
- b. Page file
- c. Stack
- d. Spool

2. Out of the following, which one is a thin board that holds and connects all the electronic components in a computer?



Hard Disk



Scanner



Circuit Board



ROM

3. Which out of the following allows you to edit the text style, numbers, and pages based on conditions in MS Excel?

- a. Conditional Formatting
- b. Editing
- c. Conditional Designing
- d. Style Formatting

4. What term do we use for an unsolicited e-mail?

- a. Spam
- b. Use net
- c. Backbone
- d. Flaming

5. Fill in the blank:

When two or more computers have a connection with one another and are eligible to share information, then that is known as a _____.

- a. Server
- b. Network
- c. Pipeline
- d. Router

13. Which of the following statement is not true about spelling and grammar checker in MS Word?
- The spelling and grammar checker can be executed to check the spelling and grammar in the whole document
 - By default, Word checks spelling and grammar as the text is being typed in the document
 - Wavy green underlines indicate possible spelling errors
 - All of the above statements are true
14. Which of the following is not a valid data type in MS Excel?
- Number
 - Time
 - Text
 - Label
15. Slide Show means viewing the slides of the presentation in succession. Which one of the following master views is available in MS PowerPoint?
- Slide Master
 - Handout Master
 - Notes Master
 - All of these
16. Fill in the blank:
If the displayed system time and date is wrong, you can reset it by using _____.
- Write
 - Calendar
 - Write file
 - Control Panel
17. Complete the following sentence:
In MS Excel, by default the cell content alignment is _____.
- left-aligned for text as well as number
 - center aligned for text as well as number
 - left-aligned for text and right-aligned for number
 - right-aligned for text and left-aligned for number
18. Complete the sentence:
Transmission of data over a wireless network such as WiFi makes it especially susceptible to hacking. Hence while using WiFi for our home computers we must _____.
- Avoid any WiFi use at home
 - Only user read-only websites and not send any data
 - Should use password protected WiFi connections and use secure sites only
 - None of the above
19. How do you see a picture as a background web page?
- `<body background = "backpiC.gif">`
 - `<body background image = 'backpiC.gif'>`
 - `<background= "backpiC.gif">`
 - `<background image ="backpiC.gif">`

- 20.** Which of the following is a small piece of software that uses computer networks and security holes to replicate itself?
- a. Trojan horse
 - b. Application
 - c. Worm
 - d. Operating system
- 21.** Fill in the blank:
By default, an image in HTML will align at the left side of the page. This alignment can be changed by using _____ attribute to set it to the center or right.
- a. Centre
 - b. Right
 - c. Align
 - d. Locate
- 22.** Which of these would best help a visually impaired user operate a computer?
- a. A touch-based smartphone interface
 - b. A CLI with visual commands
 - c. A GUI with only pictures
 - d. A screen reader paired with a command line
- 23.** To remove the inner borders but keep the outer border of a table, what should you use in MS Word?
- a. Clear Table
 - b. Use Border Painter
 - c. Modify Border Settings
 - d. Use Border and Shading
- 24.** Which of the following is NOT a type of section break in MS Word?
- a. Continuous
 - b. Next Page
 - c. Even Page
 - d. Soft Page
- 25.** In PowerPoint, which of these can be used to display data in a visually engaging way?
- a. SmartArt
 - b. WordArt
 - c. Shapes
 - d. Images
- 26.** Which multimedia element in PowerPoint allows for real-time engagement with the audience?
- a. Live Polling
 - b. Quizzes
 - c. Interactive Maps
 - d. Videos on YouTube
- 27.** Which of the following can be specified in the criteria row of a query?
- a. Field name
 - b. Data type
 - c. Sort order
 - d. Filter conditions
- 28.** How can you add headers and footers to an Access report?
- a. By using the "Design" tab
 - b. By right-clicking the report layout
 - c. By modifying the Report View
 - d. By adding them in the query design

29. How do you write a multi-line comment in Python?

- a. # comment
- b. # comment
comment
- c. /* comment */
- d. "" comment comment""

30. Which of the following is a valid variable name in Python?

- a. @variable
- b. 1 variable
- c. _variable
- d. variable\$

31. In Python, What does the 'finally' block do in error handling?

- a. Executes after the try block
- b. Catches errors
- c. Skips errors
- d. Ends the program

32. What is the main purpose of algorithm design in computational thinking?

- a. Breaking down problems
- b. Finding solutions step by step
- c. Recognizing patterns
- d. Abstracting complex details

33. Which symbol would you use for decision-making in a flowchart?

- a. Oval
- b. Rectangle
- c. Diamond
- d. Arrow

34. What is the key difference between free and premium elements in Canva?

- a. Premium elements are free to use with attribution
- b. Free elements come with no restrictions
- c. Premium elements require payment or a subscription
- d. There is no difference

35. How can a user access a new template in Canva?

- a. By clicking on 'Create New Design' and selecting a template
- b. By clicking on 'Folders' and choosing one
- c. By typing a keyword in the search bar
- d. By creating a custom design

36. Which of the following is the primary purpose of Canva's academic poster designs?

- a. To promote a product
- b. To present research in an engaging way
- c. To create advertisements
- d. To make personal invitations

37. How do you arrange scenes in Canva?

- a. By adjusting the text
- b. By resizing the video
- c. By using the timeline
- d. By changing the background

38. What is the primary function of a GUI?

- a. To use body gestures to interact
- b. To allow users to type text commands
- c. To control the device using voice commands
- d. To allow users to interact using visual elements like icons and buttons

39. Which of the following is a feature of accessibility in HCI?

- a. Touchscreen controls
- b. Gesture-based interaction
- c. Graphical user interface
- d. Voice commands and screen readers

40. What is IoT (Internet of Things)?

- a. A wireless communication protocol
- b. A type of cloud storage
- c. A method of creating virtual environments
- d. A network of physical objects that exchange data

Achiever's Section (Each Question is 2 Marks)

41. Match the following messaging and interaction methods with the names of their popular platforms and service providers from the table below:

	Column A		Column B
1.	Instant Messaging	a.	Facebook, Myspace
2.	Social Media	b.	Skype, WhatsApp
3.	Email	c.	Yahoo, Outlook

- a. 1 – b, 2 – c, 3 - a
- b. 1 – c, 2 – a, 3 - b
- c. 1 – a, 2 – b, 3 - c
- d. 1 – b, 2 – a, 3 - c

42. For the excel workbook displayed in the diagram below, which of the following is the right formula for cell C6?

	A	B	C
1	Student Name	Score in FA3	Score in FA4
2	A	11	18
3	B	17	18
4	C	19	10
5	Total Score	47	46
6	Average Score	15.67	15.33

- a. SUM(B2:B4)
- b. AVERAGE(B2:B4)
- c. SUM(C2:C4)
- d. AVERAGE(C2:C4)

50. How do algorithms help solve problems?

- a. By making decisions
- b. By showing diagrams
- c. By organizing symbols
- d. By breaking down steps into instructions

Answer Key

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