IGCSE ICT 0417 practical skills sheet

The spreadsheet, database and website skills for Papers 2 and 3, plus the key terms for the theory paper.

Spreadsheets (section 20)

Relative reference	`B2` changes when copied: `=B2*C2` in row 2 becomes `=B3*C3` in row 3
Absolute reference	`$E$1` stays fixed when copied: `=B2*$E$1` becomes `=B3*$E$1`
Named cell or range	Name E1 `VAT`, then write `=B2*VAT`
Formula vs function	A formula is any calculation you write (`=A1+A2`); a function is a built-in routine (`=SUM(A1:A10)`)
Functions in 0417	`SUM` · `AVERAGE` · `MAX` · `MIN` · `INT` · `ROUND` · `COUNT` · `LOOKUP` · `VLOOKUP` · `HLOOKUP` · `XLOOKUP` · `IF`
Nested IF	`=IF(C2>=80,"Merit",IF(C2>=50,"Pass","Fail"))`
VLOOKUP	`=VLOOKUP(A2,Prices,2,FALSE)`: find A2 in the first column of the range Prices, return column 2, exact match
Order of operations	Brackets, then indices, then × and ÷, then + and −: `=2+3*4` = 14, `=(2+3)*4` = 20
Search operators	`=` `>` `<` `>=` `<=` `<>` (not equal) · AND · OR · NOT · wildcards such as `*`
Printing	Show formulae or values as asked · fit to the stated pages · set the print area · gridlines and row/column headings on or off

Databases (section 18)

Field types	Text · numeric (integer, decimal, currency) · date/time · Boolean/logical (yes/no, true/false, checkbox)
Primary key	A field with a unique value for every record, e.g. StudentID
Foreign key	A field in one table that is the primary key in another table; it links the tables
Flat file vs relational	Flat file: one table, data often repeated. Relational: linked tables, less duplication, fewer errors
Queries	Criteria with AND / OR / NOT, wildcards and comparison operators; sort ascending or descending; calculated fields
Good form design	Clear labels, sensible order, white space, radio buttons, check boxes and drop-down menus

Documents, layout and proofing (sections 12–17)

Images	Keep the aspect ratio when resizing · crop · rotate · reflect · brightness and contrast · group and layer · reduce file size by lowering resolution or colour depth
Widow / orphan	Widow: last line of a paragraph alone at the top of a page. Orphan: first line alone at the bottom
Corporate house style	Consistent fonts, colours, logos and layout across all of an organisation's documents
Validation checks	Range · character · length · type · format · presence (plus check digit in the systems life cycle)
Verification	Visual verification (compare with the source) · double data entry

Website authoring (section 21)

Three layers	Content layer: HTML · Presentation layer: CSS · Behaviour layer: scripting (no scripting in the exam)
Head section	`<title>` · `<link rel="stylesheet" href="styles.css">` (relative file path) · `<meta charset="utf-8">` · `<meta name="viewport" content="width=device-width, initial-scale=1">` · description, keywords, author · `<base target="_blank">`
Tables	`<table> <tr> <th> <td>` · `colspan="2"` · `rowspan="2"` · widths in pixels or %
Links	Anchor (bookmark): `<a href="#contact">` to `id="contact"` · open in a new window: `target="_blank"` · email: `href="mailto:..."`
CSS rule	`h1 { color: #0000ff; font-family: Arial, sans-serif; font-size: 24px; text-align: center; }`
Style vs class	A style is set for a tag, e.g. `h1 { }`; a class is a named style you apply to chosen elements: `.note { }` with `class="note"`
Style hierarchy	An inline style attribute overrides attached stylesheets; with several attached stylesheets, the one attached last wins for the same rule. Add comments with `/* ... */`

Files (section 11)

Generic formats	.csv (data) · .txt (plain text) · .rtf (formatted text) · .pdf (fixed layout) · .css · .htm · .jpg · .png · .gif
Compressed	.zip · .rar: smaller files for storage or sending

Theory terms to know (Paper 1)

Systems life cycle	Analysis (observation, interviews, questionnaires, examining documents) → design → testing (normal, abnormal and extreme data) → implementation → documentation → evaluation
Implementation	Direct changeover · parallel running · pilot running · phased implementation
Threats	Phishing (email) · smishing (SMS) · vishing (voice) · pharming (redirect to a fake website) · spam
Protection	Strong passwords · two-factor authentication · biometrics · firewall · encryption · SSL and digital certificates · anti-malware
Networks	Router · NIC · hub · switch · bridge · LAN · WLAN · WAN · intranet · extranet · wi-fi vs Bluetooth · cloud storage

Self-test (answers at the bottom)

1. =A3*D1 is copied from row 3 to row 4. Write the new formula.
2. What does =ROUND(7.468,1) return?
3. Write the HTML to make a table cell stretch across 3 columns.
4. Name the implementation method that runs the old and new systems at the same time.
5. A field accepts 1 to 10. Give one item each of normal, abnormal and extreme data.
6. Which file format would you use to move a table between a spreadsheet and a database?

Answers: 1. =A4*D1. 2. 7.5. 3. `<td colspan="3">`. 4. Parallel running. 5. For example normal 5, abnormal 15 or "five", extreme 1 or 10. 6. .csv.