Príprava na skúšku AJ Ing

Odporúčaná literatúra:
S. R. Esteras: Infotech English for computer users, 4th edition, CUP 2008, ISBN
978-0-521702997
Online verzia: infotech_english_for_computer_users_4th_ed_students_book.pdf

S. R. Esteras, E. M. Fabré: Professional English in Use ICT, Cambridge 2007,ISBN
978-0-521-68543-6

Interactive workbook

Obsah

1. Multimedia

Multiple forms of media, components and system requirements, multimedia magic, application of multimedia.

Cvičenia

112/3B
1. Multimedia training software is distributed on *disc and optical disc*.
2. You need to have *speakers* on your computer to hear speech and music.
3. A *sound card* allows your computer to communicate with electronic musical instruments.
4. A CD ripper converts CDs to *MP3*.
5. The Encyclopedia Britannica is *also* available on DVD*, imprint, online, concise version.*

112/3C
1. B. **Hypertext** is text with links which take you to other pages.
2. E. **Hypermedia** is a form of enriched multimedia which allows an interactive and dynamic linking of visual and audio elements.
3. C. **Streaming** is a technique for playing sound and video files while they're downloading.
4. D. **Webcast** is a live event broadcast over the Internet.
5. A. **Video** editing is the process of manipulating video images.

Slovník

Multimedia is defined as the integration of text, graphics, audio, video and animation in a single application.
Headphones is device which covers each ear and allows you to listen to audio without other people hearing.
Interactivity is allowing two-way communication between a program and the user.
Microphone is equipment that allows you to record your voice.

Skratky

CD - Compact Disc
DVD - Digital Versatile Disc or Digital Video Disc
MPEG - Moving Pictures Experts Group
MIDI - Musical Instrument Digital Interface
DAW - Digital Audio Workstation
PDA - Personal Digital Assistant
RAM - Random Access Memory

2. Web design

A typical home page, web page design, HTML and web editors, web page elements, audio, video, animation, blogs.

Cvičenia

114/1 Answer these questions.
1. Why do companies have websites?
2. What is the difference between a website and a web page?
3. What is a home page?
4. Do you have a blog or personal website? Describe the home page.

114/2 Find the following words (*from text on page 115*).
1. The language used to create web documents. *HTML.*
2. The type of software that lets you design web pages without writing HTML codes.
   ○ Web editors like Macromedia Dreamweaver or Microsoft FrontPage.
3. The format invented by Adobe to distribute text files over the Internet. *PDF*
4. A method of displaying multiple HTML documents in the same browser window. *Frames*
5. Three common graphics formats used on websites. *JPG, GIF, PNG.*
6. Three popular formats used to store and play back video. *AVI, MOV, MPG.*

116/2B
1. C. Instruction in HTML *are called* **tags**.
2. E. **Cascading Style Sheets** *to define presentation of web pages, from fonts and colours to page layout.*
3. A. **A hyperlink** is any clickable text, *image or button that takes you to another place on the Web.*
4. B. **A plug-in** is a small program *used for handling audio, video and animation files.*
5. **Java applets** are used to provide *interactive features to web applications.*
6. **RSS feeds** are summaries of web content *published in the Really Simple Syndication format for download.*

Skratky

HTML - hypertext markup language.
WYSIWYG - What you see is what you get.
PDF - the portable document format.
CSS - cascading style sheets.
JPG - Joint Photographic experts Group.
GIF - Graphics Interchange Format.

PNG - portable network graphics.
RSS - really simple syndication.
WAW - windows wave audio format.
MP3 - MPEG-1 Audio Layer-3
AVI - audio video interleave
MPG - moving picture experts group.

3. Program design and computer languages.

Programming, computer languages: assembly / low-level / high-level languages, interpreter, compiler, object code, machine code. Markup languages.

Cvičenia

120/2A Match the word with the definitions.
1. C. **Flowchart** *is a diagram representing the successive logical steps of the program.*
2. A. **Source code** *is program instructions written in a particular computer language.*
3. D. **Compiler** *is a special program which converts the source program into machine code - the only language understood by the processor.*
4. E. **Machine code** *is the basic instructions understood by computers. It consists of 1s and 0s (binary code).*
5. B. **Debugging** *are the techniques of detecting and correcting errors (or bugs) which may occur in programs.*

120/2C Steps in the correct order.
Understand the problem and plan a solution. Make a flowchart of the program. Write instructions in a programming language. Compile the program (to turn it into machine code). Test and debug the program. Prepare documentation.

122/3C
1. *XML* allows us to create our own tags to describe our data better. We aren't constrained by a predefined set of tags the way we are with HTML.
2. IBM developed *FORTAIN* in the 1950s. It was the first high-level language in data processing.
3. *Java* applets are small programs that run automatically on web pages and let you watch animated characters, play games, etc.
4. *VoiceXML* is the HTML of the voice web. Instead of using a web browser and a keyboard, you interact with a voice browser by listening to prerecorded audio output and sending audio input through a telephone.
5. This language is widely used in the business community. For example, the statement ADD VAT to NET-PRICE could be used a *COBOL* program.

122/3B Answer these questions.
1. Do computers understand human languages? Why? / Why not?
2. What is the function of an assembler?
3. Why did software developers design high-level languages?
4. Which language is used to teach programming techniques?
5. What is the difference between a compiler and an interpreter?
6. Why are HTML and VoiceXML called markup languages?

Gramatika - neurčitok

123/5B

1. We use high-level languages because machine code is too difficult *to read*, *understand and debug.*
2. I went on the course *to learn* how to be a better programmer.
3. I'm not *that* interested in *learning* computer language.
4. He refuses *to do* the project with me.
5. The engineers warned the employees not *to touch* the cables.
6. They may not *come* to the conference.
7. Spyware can make your PC *perform* more slowly.
8. This program is too slow *for doing the simulation.*

Slovník

Programming language is general term of a formal language used to write instructions that can be translated into machine language and then executed by a computer.

Machine code is a set of instructions that a computer can understand directly; it is expressed in binary code and is very difficult to write .

Assembly language is a type of low-level language that uses abbreviations such as ADD, SUB and MPY to represent instructions; then translated into machine code using an assembler.

Low-level language is a language such as an assembly language, which does not need a compiler or interpreter.

High-level language are developed to make programs easier to write; for example, FORTRAN, BASIC, C and Java.

Source code is the original work of a programmer, which must be translated by a compiler.

Object code are instructions that a compiler generates from source code written in a higher-level language, for example C++.

Markup language is a language for creating web documents.

Skratky

COBOL - Common Business Oriented Language
XML - EXtensible Markup Language.
VoiceXML - Voice Extensible Markup Language.
FORTAN - FORmula TRANslation.

4. Java.

Java, characteristics of the Java language, applets, Java Virtual Machines, alternatives to Java.

125/1B Match the terms with the definitions.
1. C. **Java** *is an island in Indonesia, coffee (in American slang), and a programming language for internet application.*
2. E. **Applet** *is a small Java application, usually designed to run automatically within a web page.*
3. A **Plug-in** *is an auxiliary program that enables web browsers to support new content, for example animation.*
4. B. **Platform-independent** *software that can run on any operating system.*
5. D. **Object-oriented programming** is a computer programming technique that allows the creation of objects that interact with each other and can be used as the foundation of others; used to create graphical user interfaces.

126/2A Correct statements.
1. Java was invented by *Sun Microsystems.*
2. With the interpreter, a program is first *compiled and converted* into Java bytecodes.
3. Java *is* compatible with most computing platforms.
4. The Java language is *multi*-threaded, one part executing at a time.
5. Java *has* competitors.
6. Flash files are called *flash movies, and have a .swf file extension.*

Skratky

MRI - Magnetic Resonance Images.
Java ME - Java Micro Edition platform

5. Jobs in ICT.

IT professionals, job advertisement, letter of application for an ICT job, online profile, CV.

Cvičenia

129/1A Definitions
1. A **hardware engineer** designs and develops IT devices.
2. A **software engineer** writes computer programs.
3. A **blog administrator** edits and deletes posts made by contributors to a blog.
4. A **DTP operator** uses page layout software to prepare electronic files for publication.
5. A **network administrator** manages the hardware and software that comprise a network.
6. A **webmaster** designs and maintains websites.
7. A **computer security specialist** works with companies to build secure computer systems.
8. A **help desk technician** helps end-users with their computer problems in person, by email or over the phone.

Slovník

ICT - Information and Communications Technologies
CV - a curriculum vitae
DTP - desktop publishing

6. Communication systems

ICT, telecommunications, teleworking, digital TV and audio, pay multimedia, mobile communications, wearable computers.

Cvičenia

135/1C Complete these sentences.
1. Digital Audio Broadcasting, or DAB, is the technology behind *Digital radio.* DAB is intended to replace FM in the near future.
2. *Wearable computers* are designed to be worn on the body or integrated into the user's clothing.
3. Most existing TV sets can be upgraded to *Digital TV* by connecting a digital decoder.
4. My grandfather is 75 and he still watches *Teletext* on TV to find out share prices, weather forecasts and sports results.
5. I work in a *Call center*. I receive incoming calls with information inquiries. I also make outgoing calls for telemarketing.
6. Please complete this form and send it by *Fax* or normal mail.
7. I have a *GPS* navigation system in my car but I don't use it very often. My town is small and I know it well.

136/1D
1. The device that allows PCs to communicate over telephone lines - *modem.*
2. The practice of working at home and communicating with the office by phone and computer - *teleworking.*
3. The term that refers to the transmission of audio signals (radio) or audiovisual signals (television) - *broadcasting.*
4. Five advantages of digital TV over traditional analogue TV - *Digital TV provides a better quality of picture and sound and allows broadcasters to deliver more channels. Digital TV offers interactive services and pay multimedia. Digital TV have widescreen.*
5. Two systems that let you receive multimedia on you mobile phone - *DMB - Digital Multimedia Broadcasting.*
6. The term that means without wires - *wireless.*
7. Devices that deliver email and phone services to users on the move - *mobile phones, PDA, BlackBerrys.*
8. The meaning of the term cyborg - *is description of cybernetic organisms - beings that are part robot, part human, for example users of wearable technology.*

135/1A Answer these questions.
1. What is an ICT system?
    - *A system that uses information and communications technologies.*
2. How many types of ICT system can you think of? Make a list.
    - *Fax, GPS, call centre, digital radio, teletext, wearable computer, digital TV.*
3. How can a PC be connected to another computer? *cables...*

Skratky

DMB - Digital Multimedia Broadcasting
DVB-H - Digital Video Broadcast-Handheld
GPS - Global Positioning System
VoIP - Voice over Internet Protocol

7. Networks.

Networks, LAN, WAN, network protocol, architecture and topology, phrasal verbs.

Cvičenia

143/3B
1. To join the club, **fill in** this form and send it to our office.
2. The CPU **carries out** all the basic operations on the data.
3. Digital music **takes up** a lot of space - about 10 MB for every minute of stereo sound.
4. Thousands of networks **make up** the Internet.
5. You can use newsgroup to **find out** about the latest trends, customer needs, etc.

142/C
1. B. This network typically consists of two or more local area networks, covering a large geographical area. **WAN**
2. A. This type of network does not have a dedicated server, all the computers are independent. **Peer-to-peer**
3. On this topology, all devices are connected to the same circuit, forming a continuous loop. **Ring**
4. The language used by computers to communicate with each other on the Internet is called **TCP/IP.**
5. Which cables are used to transfer information for the Internet over long distances at high speeds? **Fibre optic cable**
6. Which device allows several computers on a local network to share an internet connection? **A router.**
7. Which device serves as a common connection point for devices in a wireless network? **Wireless access point**
8. Bluetooth is a wireless technology that uses radio waves to transmit data over **short distances (ten metres or less).**

140/1
1. What is a computer network?
    ○ *A system of computer devices or nodes interconnected so that information and resources can be shared by a large number of user.*
2. What are the benefits of using networks?
3. What does LAN stand for? *Local Area Network*
4. Where are LANs usually located?
5. What is the difference between a wired LAN and a wireless LAN? *Wired networks are linked by Ethernet cables, phone lines and high-speed fibre optic cables. Wireless networks, however, use electromagnetic waves, such as radio waves, to transmit data.*

141/2B

1. What does PAN stand for?   *Personal Area Network*
2. What is a network protocol?
   - *This is the language, or set of rules, that computers use to communicate with each other. Networks use different protocols. For instance, the Internet uses TCP/IP.*
3. How do you log on to an Internet Service Provider?
   - *You need to type your username and password.*
4. WiMAX is a type of wireless network. What it is used for?
   - *WiMAX is used for medium-range distances.*
5. What equipment do you need to set up a wireless LAN?
   - *You'll need computers equipped with a wireless adapter or wireless card, a wireless access point (a wireless router) and a broadband internet connection.*
6. What are the advantages and disadvantages of wireless networks?
   - *Wireless networks let you move, or roam, from one access point to another, but they are less secure and subject to interference.*
   - *Wired LANs are more difficult to install, but they are cheaper, faster and more reliable.*

Phrasal verbs

Carry - transport
Carry out - execute
Turn on / switch on - start the operation of something.
Turn off / switch off - stop the operation of something.
Plug into - connect
Set up - establish
Sign up - register, enrol in service
Try out - test or use experimentally
Find out - learn, discover
Take up - occupy
Make up - constitute, form
Fill in - write in necessary information

Skratky

MAN - Metropolitan Area Network
WAN - Wide Area Network
WiMAX - Worldwide Interoperability for Microwave Access
GSM - Global System for Mobile communication
Wi-Fi - Wireless Fidelity

8. Video games.

Electronic devices, game platforms, game genres, pros and cons of gaming.

Cvičenia

147/2B Correct sentences.
1. *FPS first-person shooter or action games* are currently the most popular.
2. *Role-playing game* RPGs have been made possible by widespread *broadband* access.
3. Oblivion is an *role-playing game.*
4. The Sims series is *dominant* in the Simulation category.
5. Strategy games are mainly restricted to *PC, largely because the mouse and keyboard are central to gameplay.*
6. Warcraft belongs to the *strategy game.*
7. Console games typically prefer *sports, racing, fighting, RPGs, and few FPS titles.*

147/2C Find words or phrases
1. New, at this time or period - **currently**
2. Existing or happening in many places and/or among many people - **widespread**
3. In spite of, notwithstanding - **despite**
4. More and more - **increasingly**
5. A smaller category within a particular genre - **sub-genre**
6. Big successes - **massive hit**
7. Sold in very large numbers - **best-selling**
8. Modernized - **updated**

9-10. New technologies, AI, robotics, intelligent homes.

Trends, new technologies, nanotechnologies, nanocomputers, nanomedicine, nanomaterials. AI, robots, androids, expert systems, bimetrics, ubiquitous computing, smart devices.

Cvičenia

150/1A Answer Questions.
1. What do you think a trend is? *A new development, a change.*
2. What trends in ICT do you think will affect our lives in the future? Make a list.
   - *Virtual reality (learning, education, gaming, medicine), cloud computing..*
   - *Nanotechnology, artificial intelligence (AI), biometrics, ubiquitous computing, smart devices, smart home, appliances.*

151/1C Answer Questions.
1. Which unit of measurement is used in nanotechnology?
   - *Nano devices are measured in nanometres (one billionth of a metre).*
2. What are the advantages of nanotubes over regular materials?
   - *Nanotubes are more flexible, resistant and durable than steel or aluminum.*
3. What will doctors use expert systems for?
   - *Doctor will be using expert systems to diagnose illnesses.Expert system are programs containing everything that an expert knows about a subject.*
4. What features are analysed by biometrics?
   - *Biometric analyses these features - fingerprints, facial features, voice, iris and retina patterns.*
5. Which trend refers to computers embedded in everyday devices, communicating with each other over wireless networks? *Smart devices.*
6. What will the alarm system do if someone breaks into a smart home?
   - *Alarm system alerts the alarm company and then the police.*
7. How will devices be interconnected inside the smart home.
   - *All home devices will be interconnected over a home area network where phones, cables services, home cinemas, touch screens, smart mirrors and refrigerator.*

151/1D
1. A microscopic robot, built with nanotechnology - **nanobots**
2. A robot that resembles a human - **android**
3. Biological identification of a person **- biometrics**
4. Integrated, inserted into - **embedded**

5. Electrical devices, or machines, used in the home - **appliances**

152/2A

RFID is a technology that uses radio waves and chip-equipped tags to automatically identify people or things.

152/2B

1. A. RFID stands for *Radio Frequency Identification.*
2. B. Radio tags *can be attached to or embedded into products, animals and humans.*
3. A. Active RFID tags *have a communication range of several hundred meters.*
4. A. RFID tags *have a communication range of several hundred meters.*
5. B. Radio tags may be implanted under the skin *to give doctors instant access to a patient's medical history.*
6. A. According to consumer organizations, RFID tags *could be used to track consumers or to steal a person's identity.*