Computer Applications Olympiad

A project of the Institute of IT Professionals South Africa.

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FIRST ROUND QUESTION PAPER 2016

Not to be used before 4 May 2016

INSTRUCTIONS TO THE CANDIDATES

1. *All answers must be typed or pasted in the document **AnswerSheet.***
2. *You may do the questions in any order, but you have to make sure the answers are placed correctly on the answer sheet. Save the answer sheet as instructed by your teacher.*
3. *The files you need to answer the questions have been provided to your school. Ask your teacher/invigilator where to find them.*
4. *The paper must be completed under "examination conditions". No communication (oral, electronic or any other form) with other contestants is permitted.*
5. *You may use the application of your choice and, if necessary, convert the data as it suits you.*
6. *You have one hour (60 min.) to complete this paper. After one hour you may be given time to print your answer sheet, but no additions or alterations to the answers or files will be allowed.*
7. *All marking is done from hard copy, i.e. from the printed answer sheet.*
8. *Each correct answer counts four (4) marks.*
9. *You need to store your files where you found them and where your teacher can access them in case the judges want to see how you obtained the answer. **Do not delete any of the files. Do not attempt to modify any files after the end of the contest.***

A: WORD PROCESSING

*The branch office of the Department of Water Affairs & Sanitation in Jamestown runs its own in-house magazine. The editor has asked you to check the "**Eight Ways.doc**" article for specific issues before placing it in the magazine.*

1. What does the World Economic Forum rank as the greatest <u>threat</u> to economies and peace? A two- word answer is expected.

2. Most word processor programs have a spell checker which picks up 'incorrectly spelt' words. The spell checker also sometimes mistakenly picks up proper nouns (e.g. names which begin with a capital letter including a person's name). Identify three words in the article which are NOT proper nouns and which are DEFINITELY spelt incorrectly. Paste/type the <u>shortest</u> of these three words as incorrectly spelt on your Answer Sheet).

3. Who is the <u>author</u> of the "**Eight Ways.doc**" file?

4. Articles for inclusion in the in-house magazine need to be of a specific length. How many <u>characters</u> (including white spaces) are there in this article?

5. What is the width of the <u>spacing</u> between the 2 columns under the heading '5. Enforcement'?

6. What is the exact <u>width</u> of the image of the women trying to put out the fire on the last page?

7. In the writing of this article the author consulted a number of individuals, books, magazine articles and websites. These sources were captured as part of the document. What is the <u>name</u> of the website on which the article by Prof Bob Scholes appears?

B: SPREADSHEETS

The Department of Water Affairs & Sanitation runs a call centre to answer questions about our dams. Some of the questions are definitely asked to catch out the call centre staff. All the difficult questions about dams and reservoirs are passed to you,

Use the spreadsheet **"Register"** to answer the following questions. The answers to all the questions must be obtained from the data provided on the worksheet.

It is most likely that extra columns of calculations will need to be created in order to answer some of the questions. Questions 5, and 6 have been allocated columns in which you **must** do your calculations. These columns must not be deleted but must be kept as part of the spreadsheet so that the judges can look at them later. These files may not be modified after the contest has ended.

For this Olympiad please regard a dam, a reservoir and a weir (keerwal/uitkeerwal) as the same thing.

1. How many unique 'WM codes' refer to reservoirs in the Western Cape province?

2. Give the number of reservoirs that are on the Tradouw River or one of its tributaries.

3. How many 'Drainage Areas' have an "A1" or a "1B" in the code?

4. What is the average capacity (in 1000 m³) of the reservoirs which have any type of "arch" in the wall structure?

5. How many reservoirs were registered on the 29th of February (of any year)? You MUST show your working (if any) in column Q?

6. The "wall area" can be calculated (very roughly) by multiplying the wall height by the crest length. What is the greatest value for "wall area" in the list of reservoirs? You MUST show your working in column U.

7. Which town has the most dams around it? This town will be listed as the nearest town for the most reservoirs.

C: DATABASE

South Africa is in the grip of its worst drought in more than a century. The levels of most of the country's major dams have decreased significantly over the past year with five provinces being declared disaster areas and severe water restrictions being implemented countrywide.

The database "**SA Dams**" contains data, as on 15 February 2016 (Week 7), on some of the larger dams in South Africa. Carefully study the database tables, including the field descriptions, and then answer the following questions.

The data is a collation of data obtained from the website of the Department of Water & Sanitation. The actual readings were as reported on 15 February 2016.
(https://www.dwa.gov.za/hydrology/Weekly/Province.aspx)

For this Olympiad please regard a dam, a reservoir and a weir (keerwal/uitkeerwal) as the same thing.

1. How many dams are listed in the database?

2. On which river does the Clanwilliam Dam lie?

3. How many of the dams rated as "Large" lie in the North West province?

4. Some areas of the country have had reasonable rainfall over the past year. How many dams have more water in them now (Week 7) than they had at the same time last year?

5. You are doing some research on multi-arch dam walls in the Eastern Cape. As you will be onsite for at least one day you will need accommodation for at least one night. What is the name of the town that is closest to a dam with the highest multi-arch wall in the Eastern Cape?

6. South Africa is divided into 19 water management areas (WMA). The offices in these areas are responsible for the management of all the dams in their respective area. You've noticed a problem with water quality in the dams on the Mooi River in KwaZulu-Natal and want to contact someone to report this. What is the telephone number of the person responsible for these dams?

7. A drainage region is an area of land where surface water from rain or melting snow converges to a single point at a lower elevation. Which drainage region (A … X) has the largest number of rivers flowing through it? (NB. Rivers must only be counted once in each drainage area.)

D: HTML

Use the folders "**css**" and "**images**" as well as the html document "**Wisegarden**" to answer the following questions. In each case write down only the letter of the most appropriate answer.

1. The text 'Water-wise gardening' is supposed to appear in the browser tab. What underlined element must be added to the <head> element of the document to achieve this?

A. <title>Water-wise gardening</title>
B. <tab>Water-wise gardening</tab>
C. <head>Water-wise gardening</head>
D. <header>Water-wise gardening</header>

2. The background colour of the webpage is set in the stylesheet. How can the background colour be changed to light yellow (#FFFFE0) using html instead of the stylesheet?

A. Add the attribute background="#FFFFE0" to the <html> tag
B. Add the attribute backcolor="#FFFFE0" to the <body> tag
C. Add the attribute bgcolor="FFFFE0" to the <body> tag
D. Add the attribute bgcolor="FFFFE0" to the <head> tag

3. The third image in the table (indigenous plants) does not display. Which TWO corrections should be made to ensure that the image displays correctly?

A. Change the attribute sre to scr and the file extension to jpg
B. Change the attribute sre to src and the file extension to bmp
C. Change the attribute sre to scr and the file extension to png
D. Change the attribute sre to src and the file extension to jpg

4. Between which pair of tags is the cascading style sheet loaded?

A. <body> and </body>
B. <head> and </head>
C. <header> and </header>
D. <nav> and </nav>