APPLICATIONS OLYMPIAD 2016

FINAL ROUND

Instructions (READ these before proceeding!)

1. You have **four** hours; allocate your time according to the marks allocated.
2. You may produce the material **in any order.**
3. Make sure you have something to submit for **each** of the sections. Go back to improve documents if time allows.
4. The rules are similar to those for a Grade 12 examination and include such items as:
    a. No communication with each other.
    b. No electronic devices such as flash drives, iPods, phones, etc.
    c. Do nothing to disturb other participants.
    d. Ask permission to get up and leave your station.
5. You have access to the Internet to find documents and help. **Beware as this may be a trap that tempts you to use up available time for research rather than production.**
6. You have to acknowledge the source of every illustration, document or quotation you use.
7. You may NOT use e-mail facilities or other communication apps during the contest.
8. It is important to **save** every step of your work for later evaluation.
9. Before you hand in, please ensure that you have saved all files in the folders as described on the attached Appendix 1. Check also that all the files open correctly.
10. After the event you may be asked to demonstrate your results to the judges.

BACKGROUND

You represent the AO (Athletes Organisation) in the country of Andostein. Prepare documents to promote the Olympic Games and provide the OC (Olympic Committee) with required information. Andostein uses the Rixdollar (symbol R) as currency.

1. DOCUMENT

Prepare an A3 Infoposter which the OC can use in schools to promote the Olympics. For the purpose of this competition we will use the term Infoposter to mean an Infographic which will be printed in poster form. While it will not be a true infographic it should have elements of an infographic on it. Marks will be allocated for how effectively it represents the underlying data. Save any data you used, other than the data provided/obtained in questions 2 & 3, which you incorporated into you Infoposter so that the judges can look at it.

1.1 To give you a start, there is a folder called "Infographic Data" which contains some examples of Infographics as well as clipart which you could use.

(5)

1.2 You should search the Internet for suitable graphics – including pictures. [Andostein is a mountainous country identical to Switzerland, but obviously not using the Swiss flag or other Swiss symbols.]

(5)

1.3 You MUST use some information from the Spreadsheet section. If it is suitable, you may use any aspect of the data given in the Spreadsheet question. You do not have to use the solutions to the questions.

(5)

1.4 You MUST use some information from the Database section. If it is suitable, you may use any aspect of the data given in the Database question. You do not have to use the solutions to the questions.

(5)

1.5 Your final product will be judged on your creativity, how effective it is as a poster and how effectively it presents relevant information.

(10)

[30]

2. SPREADSHEET

The selection committee knows of your expertise in using a spreadsheet. Some of the documents presented by the Athletes Organisation have incomplete or un-useable data. You are required to help by completing the following tasks in the Excel files supplied:

2.1 The details of the triathletes last event were captured in a spreadsheet. Unfortunately on opening the spreadsheet the points which should have been awarded to each finisher were found to be missing. Using the file called **Spreadsheet 2.1** add a formula to the column **Points** which will determine the points each competitor received based on the following rules:
   - The winner gets 1000 points
   - The points decrease by 12 points for each minute, or part thereof, that a competitor finishes behind the winner's time. For example, Tiaan Rossouw who was 10th in the race finished 13 minutes and 26 seconds behind the winner. He therefore earns 1000 − 14 * 12 = 832 points.

- The least number of points which can be allocated is 350 points. Finishers who earn fewer than 350 points using the rules will therefore get zero points.

You may use multiple columns in order to obtain your solution but these columns should be clearly labelled. Marks will be allocated for partial solutions.

(9)

2.2 You have been given the results of the marathon trials but it also has some details missing. Use the file called **Spreadsheet 2.2** to do the following:
- Add a formula in column E that will determine how long each runner took to complete the marathon. The start time for all runners was 6:30 AM (cell O1) and the time each runner finished is given in column K.
- Determine the position (rank) for each runner at the half marathon position. (Column I)
- Sort the data by finishing time with the winner at the top.
- In order to be considered for selection, an athlete must have finished in one of the top 10 positions for their gender and have a time of less than 2:30:00 for males and less than 3:00:00 for females. Add a column (or columns) to the right of the table which must contain a formula which indicates whether the runner qualifies or not. Runners who qualify must have a "Q" in the cell otherwise it must be blank.

(15)

2.3 Read the document entitled **"Brief introduction to pivot tables"**. The file referred to in the document is also available for you to use. It is called **Pivot Table Example Data**. Once you understand how to create a pivot table you must use the file called **Spreadsheet 2.3** to produce a pivot table and then to extract information from the pivot table.
- The spreadsheet contains a list of sponsors who are helping to fund the Andostein Olympic team. They pledged an amount of money (column C) and still have to give the amount indicated in column E. Each sponsor has scheduled their main fundraising event within the next year. The month in which it will be held is given in column F.
- Use the data to create a pivot table as shown in the figure below. Save it on a new worksheet called **Pivot Table.** Your final result must look the same as the example shown below.

Amount due by month and area	Area				
Month of Main Event	Annaberg	Lednice	Nitra	Vrdrany	Grand Total
August 2016	R112 327,00	R92 686,00		R53 115,00	R258 128,00
September 2016	R133 833,00	R76 239,00	R80 765,00	R63 285,00	R354 122,00
October 2016	R98 880,00	R120 997,00	R31 738,00	R171 777,00	R423 392,00
November 2016	R228 079,00	R159 636,00	R61 128,00	R103 666,00	R552 509,00
December 2016	R28 366,00	R121 060,00	R25 218,00	R50 260,00	R224 904,00
January 2017	R91 360,00	R299 373,00	R9 797,00	R131 375,00	R531 905,00
February 2017	R115 371,00	R228 298,00	R176 238,00	R139 659,00	R659 566,00
March 2017	R108 065,00	R232 439,00	R35 932,00	R59 011,00	R435 447,00
April 2017	R78 393,00	R56 926,00	R40 695,00	R71 465,00	R247 479,00
May 2017	R139 337,00	R184 592,00	R94 418,00	R195 461,00	R613 808,00
June 2017	R137 349,00	R61 139,00	R72 154,00	R163 122,00	R433 764,00
July 2017	R14 608,00	R172 321,00	R57 767,00	R36 057,00	R280 753,00
Grand Total	R1 285 968,00	R1 805 706,00	R685 850,00	R1 238 253,00	R5 015 777,00

- Extract, from your pivot table, a list of all sponsors from the Nitra area who are having a main fundraising event in February 2017. Name this worksheet as **Q2.3**

(11)

2.4 You may use any relevant information from this question to augment your infographic.

[35]

3.   DATABASE

The database **IOC Medal Winners** contains the data on the medal winners of the events at the Summer Olympic Games from 1896 through to 2008. Note that the database contains two linked tables, viz. *All Medalists* and *IOC Country Codes*.

The spreadsheet **London 2012 Results** contains a number of different sheets each containing the details of individual athletes who participated in the finals of some but not all of the events at the 2012 Summer Olympic Games held in London.

NOTE: Study these sets of data carefully as you will be required to use them to answer the questions that follow. Pay particular attention to the field names in the database and the column headings in the different worksheets and note also that the order is not the same.

The spreadsheet **Olympic Qualifying Athletics** contains the times that men and women athletes need to achieve in a qualifying competition in order to participate in the athletic events at the 2016 Summer Olympic Games to be held in Rio de Janeiro.

NB. The judges may ask you to show them how you obtained the answers so it is important that you make notes and also save any queries/reports that you may have created in getting to the answer using a suitable name.

NBB. Make a backup copy of the database as you might require it for the later questions.

3.1   Create a select query to determine the number of Gold medals won by South Africa in the period 1896 – 2008.

(2)

3.2   Create a select query to determine at which Summer Olympic Games (year and city) South Africa won its first medal of any colour.

(2)

3.3   Create a query that when it is run will allow a user to enter the year in which the Games took place (e.g. 2008, 1996, 1956, etc.), the discipline (e.g. Swimming, Water Polo, etc.) and the medal colour (i.e. Gold, Silver or Bronze). The query must produce a list of the names of the athletes, the country they represented (e.g. United States) and the event for which they received the medal (e.g. 100m Hurdles). The list must be in alphabetical order according to gender and then the event. The example below shows the names of the Gold medal winners that participated in the swimming events at the 2008 Olympic Games.

(3)

Athlete	Country	Event
Peirsol, Aaron	United States	100m backstroke
Kitajima, Kosuke	Japan	100m breaststroke
Phelps, Michael	United States	100m butterfly
Bernard, Alain	France	100m freestyle
Mellouli, Oussama	Tunisia	1500m freestyle
Lochte, Ryan	United States	200m backstroke
Kitajima, Kosuke	Japan	200m breaststroke
Phelps, Michael	United States	200m butterfly
Phelps, Michael	United States	200m freestyle
Phelps, Michael	United States	200m individual medley

3.4 Use the **IOC Medal Winners** database and any appropriate method to determine the name of the athlete who earned the highest overall number of medals in the period 1896-2008. Also indicate the sport in which these medals were earned.

(3)

3.5 Remember that the **IOC Medal Winners** database only contains the details of the team and individual medal winners up to 2008. You have been contracted by the IOC to update the database so that it includes the 2012 individual results. You therefore need to add to the database the relevant data pertaining to the <u>medal winners</u> who participated in the 2012 London Olympic Games which you will find in the **London 2012 Results** spreadsheet. In combining the data in the database with that in the spreadsheet you may use whichever method you deem the most suitable.

(10)

NOTE: If you have been unsuccessful in combining the data in the database and the spreadsheet in Question 3.5 then use the backup copy of the database that you made earlier to answer the remaining questions. If you omitted to make a backup copy then you may ask the organisers for a copy. If however, you use the backup copy or ask for a copy you will be penalised by 2 marks.

NOTE: Across the world many countries are grouped together in alliances of various sorts. So for example, many of the countries in Europe are grouped in the European Union (or EU), soon to be without the United Kingdom. Brazil, Russia, India, China and South Africa are grouped together in what are called the BRICS nations – being the acronym formed by combining the first letters of the names of the countries.

3.6 The IOC has requested you to also summarise the data to produce a number of different reports. In developing the reports you may use any of the applications but you must be able to replicate the reports when requested to do so by the judges who may also ask you to create similar reports.

3.6.1 Create a report summarising the total number of medals each country has won. Your report should be similar to the one below - note that the full name of the country is used and that they are in alphabetical order.

(5)

Country	Number of Medals
Afghanistan	1
Algeria	14
Argentina	239
Armenia	9
Australia	1075
Austria	146
Azerbaijan	16
Bahamas	23
Barbados	1
Belarus	92
Belgium	408
Bermuda*	1
Brazil	372

3.6.2   Create a report summarising the total number of Gold, Silver and Bronze medals the 5
BRICS nations have won. Your report should be similar to the one below.

(5)

Country	Gold	Silver	Bronze
Brazil	59	139	174
China	234	252	193
India	128	16	34
Russia	192	206	240
South Africa	24	37	36

3.6.3   Create a report summarising the sports in which the 5 BRICS nations won medals. Your
report should be similar to the one below.

(5)

Country	Brazil	China	India	Russia	South Africa
Archery		15		1	
Artistic G_		87		55	
Athletics	21	15	2	83	26
Badminton		47			
Basketball	60	24		23	
Beach volley_	18	4			
Boxing	1	5	1	20	19
Canoe / Kayak F		4		13	
Canoe / Kayak S				2	
Cycling Road				4	2
Cycling Track		3		12	14

3.7   You may use any relevant information from this question to augment your infographic.

[35]

[100]