UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

SECOND SEMESTER EXAMINATIONS, MAY 2018

COURSE NO: MN 370
COURSE NAME: COMPUTER APPLICATIONS IN MINING I
CLASS: MN III (T'15) TIME: 3 HOURS

Name**:** _____Index Number: _____

ANSWER ALL QUESTIONS

SECTION A: GEOVIA SURPAC (30 marks)

TASK A (20 marks):

i. Launch MS Office Word, set the page according to the UMaT standard, and save the document in the *MN_370* folder with your index number.
ii. Launch Surpac and set the following folder as your work directory: *BLOCK_MODEL*.
iii. From your work directory, locate the following block model file: *my_block_model*.
iv. Using this file, display blocks with grade greater than 0.5 g/t.
v. Capture the display using the Windows snipping tool and affix in the saved word document. Label it as **Fig. 1 Blocks with Grade Greater than 0.5 g/t.**
vi. View attribute for any block of your choice.
vii. Capture the Block Attribute Window, and affix in your MS Word document as **Fig. 2 Block Model Attributes**.
viii. From the block attributes in Fig. 2 and using the MS Eqn. Editor for expressing the necessary formula, calculate:
    a. the tonnage of material in the block
    b. the quantity of gold (in grams) in the block

Assume all block dimensions are in metres

ix. Generate a block model report in *csv* format, indicating total tonnage and average grade for blocks above a cut-off of 0.5 g/t. Save this file as an Excel document with your index number in the MN_370 folder.
x. How much revenue will be expected above this cut-off given a metal price of $31.5/g and a recovery factor of 89% (Do this in your saved Excel document).
xi. Generate reports of the volume, tonnage and average gold grade above the follwing cut-offs: 0, 0.5, 0.6, 0.7 and 0.8.
xii. Tabulate in your saved Excel document the various tonnages, volumes and average grades recorded for the cut-offs.
xiii. Generate a line graph for tonnage versus cut-off grade.
Note: Make cut-off grade the independent variable.
xiv. As a resource engineer, briefly discuss the trend observed, and provide investors with the reason for such trend (Do this in your saved MS word document).

TASK B (10 marks):

i. Set the following folder as your work directory: *PIT_DESIGN*
ii. Design a pit with ramp around the given ore outline using the following parameters:

Pit Base Elevation: -20
Ramp Width: 20 m
Ramp Gradient: 10%
Berm Slope Angle: 45^{o}
Berm Width: 5 m
Bench Height: 10 m
Number of benches: 5

SECTION B: ADVANCED MS EXCEL (20 marks)

TASK C:

i. Open the *BM_MACRO.xlsx* in the *MN_370* folder.
ii. Go to the *BM_MACRO* sheet.
iii. Record a macro for the following fields for the first record: TONNAGE, MATERIAL CLASSIFICATION (Refer to *Extra_info* sheet), METAL CONTENT, REVENUE PER TONNE. Name the macro as *bm_macro* and store it in the *BM_MACRO* workbook (current workbook). Assign the following shortcut to the macro: CTRL+SHIFT+W.
iv. From the Developer Ribbon, click on Visual Basic to open the Visual Basic editor.
v. Using the Visual Basic editor, edit the *bm_macro* to include "For loop" for 150 iterations.
vi. Create a button for the macro by assigning it to a shape of your choice with the inscription: Click to Complete Report.
vii. Click on the button to completely fill all records.
viii. Save the workbook as a macro enabled workbook in the *MN_370* folder with file name *My_bm_macro*.

SECTION C: MS ACCESS (20 marks)

i. Launch MS Access, create a database and save it in the *MN_370* folder with your index number as the file name.
ii. Create a table called *Truck Production* with the following structure:

Field Name	Data Type	Field Size
Truck	Short Text	4
Week 1 (t)	Number	Integer
Week 2 (t)	Number	Integer
Week 3 (t)	Number	Integer
Week 4 (t)	Number	Integer

- Set the field *Truck* as the primary key

iii. Create a form for the table, name it as *Truck Production*, and enter the following records:

Truck	Week 1 (t)	Week 2 (t)	Week 3 (t)	Week 4 (t)
AJP1	3520	3487	3490	3506
AJP2	3497	3510	3505	3515
AJP3	3505	3497	3485	3490
AJP4	3515	3505	3502	3505

Table shows weekly production in tonnes for four different trucks over a period of four weeks.

iv. Create a query from the *Truck Production* table (include all fields) and save it as *Truck Production Query*.

v. Using the expression builder, add the following fields to the *Truck Production Query*: *Total Production, Average Production and Remark.*

- Obtain *Remark* according to the following criteria:

Average Production (t)	**Remark**
3500 and above	Satisfactory
Below 3500	Unsatisfactory

vi. Create a report for the updated query including all fields. Save it as *Truck Production Report*.

Examiners: Richard Amoako*/Assoc Prof P. A. Eshun*