QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1:50 000 topographical map 3227CD KING WILLIAM'S TOWN, as well as the 1:10 000 orthophoto map 3227CD14 KING WILLIAM'S TOWN.

Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question number (1.1–1.10).

1.1 The mean annual change in the magnetic declination on the topographical map is ...
   A 7° eastwards.
   B 23°12' west.
   C 7° westwards.
   D 23°12' east.
   [C ✔✔]

1.2 The contour interval on the topographical map is ... metres.
   A 10
   B 20
   C 50
   D 60
   [B ✔✔]

1.3 The two types of scale shown on the topographical map are the ...
   A ratio scale and word scale.
   B Richter scale and line scale.
   C word scale and line scale.
   D line scale and ratio scale.
   [D ✔✔]

1.4 The drainage pattern found in block F7 is ...
   A a trellis.
   B radial.
   C dendritic.
   D rectangular.
   [C ✔✔]

1.5 The primary activity found in block C10 on the topographical map is ...
   A orchards and vineyards.
   B mining.
   C fishing.
   D excavations.
   [D/B ✔✔]
1.6 The orthophoto number 3227 refers to ...
   A longitude and contour lines.
   B latitude and longitude.
   C latitude and contour lines.
   D contour lines and isobars.

1.7 The recreational facility found in block E10/E11 on the topographical map is a ...
   A golf course.
   B horse riding club.
   C caravan park.
   D model aircraft club.

1.8 The type of slope south of Kwa Jubisa in block J4 leading to the farmland is a ...
   slope.
   A horizontal
   B terrace
   C concave
   D convex

1.9 An aerial photograph which shows contour lines, spot heights, trigonometrical
   stations and other labelled features, is called a/an ...
   A oblique aerial photograph.
   B topographical map.
   C orthophoto map.
   D vertical aerial photograph.

1.10 The index of the map sheet northwest of King William's Town is ...
   A 3227DA.
   B 3227CA.
   C 3327BA.
   D 3327AA.

(10 x 2) [20]
QUESTION 2: MAPWORK TECHNIQUES AND CALCULATIONS

2.1 Locate trigonometrical station 77 at X in block 12 and benchmark 557.0 at Q in block 14 when answering the questions below.

2.1.1 What is the direction of trigonometrical station 77 from benchmark Q?

*West South West/West/South West ✓ ✓

(1 x 2) (2)

2.1.2 Measure the true bearing of benchmark Q from trigonometrical station 77.

*(78°–82°) ✓ ✓

(1 x 2) (2)

2.1.3 Calculate the average gradient between benchmark Q and trigonometrical station 77.

\[
\begin{align*}
\text{Gradient} &= \frac{\text{VI}}{\text{HE}} \checkmark \\
\text{H} &= \text{D} \checkmark \\
\text{Rise} &= \text{Run} \\
\text{VI} &= 610.8 - 557 \\
\text{HE} &= 56\text{mm ✓} \times 50\ 000 \\
&= 53.8 ✓ \\
&= 2800 ✓ \\
&= 1 : 52,04 ✓ ✓
\end{align*}
\]

[Range 1:50 to 1:54] (6)

2.1.4 You are travelling to Grahamstown from King William’s Town on the N2 and stop at benchmark Q. Is benchmark Q and trigonometrical station 77 intervisible? Explain your answer.

*Yes ✓ ✓ There is no relief obstruction between these points ✓ ✓

(2 x 2) (4)

2.2 Give the approximate height of the runway at the Bisho Airport in block E2/3, F2.

*581–599 m ✓ ✓

(1 x 2) (2)
2.3 Give ONE reason for the site chosen for the construction of Bisho Airport.

- Flat land or gentle slope ✓ ✓
- No high lying areas or mountains ✓ ✓
- Away from built-up areas ✓ ✓
- Reducing the effect of noise and air pollution to avoid accidents ✓ ✓
(Any ONE) (1 x 2) (2)

2.4 Identify the feature found at grid reference 32°55'42"S; 27°21'50"E.

- Dam/Perennial water ✓ ✓ (1 x 2) (2) [20]

QUESTION 3: RELIEF AND DRAINAGE

3.1 Study the section of the Buffalo River between R and S on the topographical map and identify the following fluvial (river) features:

- T flood plain ✓ ✓
- U braided stream/meander/straight stream channel ✓ ✓
- V meander/slip-off slope ✓ ✓ (3 x 2) (6)

3.2 In which direction is the Buffalo River flowing? Give a reason for your answer.

**Answer:** Buffalo river is flowing in a southerly /south-easterly direction ✓ ✓ (1 x 2) (2)

**Reason:** Dam wall is built downstream/spot heights indicate ✓ ✓
- river flowing from high (eg 366 in block C9) to low ✓ ✓
- altitude (eg 316 in block I15) ✓ ✓
- Contour head points upstream ✓ ✓
- Tributaries point with acute angle pointing downstream ✓ ✓
(Any ONE) (1 x 2) (2)

3.3 Identify the natural landform/feature W in block G8 and flow feature Y in block E/F1:

- W spur/ridge ✓ ✓
- Y marsh and vlei ✓ ✓ (2 x 2) (4)
3.4 Rainfall in the mapped area is seasonal. Give THREE pieces of evidence from the topographical map to prove this statement.

- Non-perennial streams✓ ✓
- Presence of large number of farm dams./ Storage dams✓ ✓
- Presence of reservoirs / water towers✓ ✓
- Presence of wind pumps✓ ✓
- Cultivated land near rivers✓ ✓
- Lack of natural vegetation✓ ✓
(Any THREE) (3 x 2) [20]

QUESTION 4: LAND-USE AND ECONOMIC ACTIVITIES

4.1 Identify the type of road entering the mapped area from East London.

- National road/National freeway/N2 ✓ ✓ (1 x 2) (2)

4.2 Identify the land use below by referring to both the orthophoto map and the topographical map. Letters L, M, N and O have been printed on the orthophoto map. Identify the land use found at:

- L cemetery/graveyard ✓ ✓
- M university/educational/ Ford Hare University ✓ ✓
- N excavations ✓ ✓
- O reservoir ✓ ✓ (4 x 2) (8)

4.3 Fort Hill in block D10 is high income residential area. Give TWO reasons from the topographical map to prove this statement.

- Large stands/plots ✓ ✓
- Large houses ✓ ✓
- Close to the recreational area ✓ ✓
- More trees visible/ Greenery ✓ ✓
- Away from the industries ✓ ✓
- Scenic view ✓ ✓
(Any TWO) (2 x 2) (4)

4.4 Refer to the industrial area Schornville in block E9/10. Identify THREE factors on the topographical map that will attract tourists to the town.

- Visiting the factory shop ✓ ✓
- Tours to factories ✓ ✓
- [Accept any other] (Any THREE) (3 x 2) (6)

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4.5 The town of King William’s Town has a good tourist potential. Identify and name THREE features found on the topographical map that will attract tourists to the town.

House of Steven Biko✓✓
Golf course✓✓
Fort Murray✓✓
Dam / Laing Dam✓✓
River✓✓
Presidential Residence✓✓
Air strip – (with motivation) ✓✓
(Any THREE)

(3 x 2) (6)

4.6 The dominant type of activity being practised over the mapped area is commercial farming. Give TWO reasons to prove this statement.

Row of trees/Wind breaks✓✓
Irrigation takes place (windpump, dams) ✓✓
Large farms✓✓
Name of farms✓✓
Farm boundaries✓✓
Estates✓✓
Good infrastructure✓✓
(Any TWO)

(2 x 2) (4)

4.7 Towns and cities can be divided into three main categories on the basis of the type of factor that determines their location.

4.7.1 What type of town can King William’s Town be classified as?

Central place town✓✓

(1 x 2) (2)

4.7.2 Give a reason for your answer.

The town provides a range of urban services to surrounding area✓✓
[Concept]

(1 x 2) (2)

4.8 Why are several recreation grounds found on the banks of the Buffalo River?

During times of floods they will act as a buffer between the river and the houses ✓✓
The land is also flat on the banks of the river making it easy to construct recreation facilities✓✓
Water for irrigation✓✓
Close to water for recreational activities like swimming, fishing, canoeing, etc. ✓✓

[Accept others]
(Any ONE reason)

(1 x 2) (2)

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Please turn over
4.9 The railway shows a higher level of detour than the roads on the east of the map. Give a possible reason for this.

*The railway line requires a gentle gradient thus there is a greater detour to avoid the high lying areas ✓✓*
*Roads can be built on steeper gradients ✓✓*
*Railway lines follow the contours ✓✓*
*(Any ONE)*

(1 x 2) (2)

4.10 Most of the built-up area to the west of King William’s Town on the topographical map has developed recently. Give ONE piece of evidence to prove this statement.

*Most of the settlements have a planned irregular street pattern ✓✓*
*This is a recent feature in town planning thus these settlements have been recently developed ✓✓*
*Topographical map is a later addition ✓✓*

(1 x 2) (2)

[40]

TOTAL: 100