The Management University of Africa

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UNDERGRADUATE UNIVERSITY EXAMINATIONS

SCHOOL OF EDUCATION (SOE)

DEGREE OF BACHELOR OF EDUCATION ARTS

GEO 222: TECHNIQUES IN GEOGRAPHY II: CARTOGRAPHY

DATE 27TH JULY 2026

DURATION: 2 HOURS

MAXIMUM MARKS: 70

INSTRUCTIONS

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **THREE** questions.
6. Question **ONE** Carries **25 MARKS** and the rest carry **15 MARKS** each.
7. **Write all your answers in the examination answer booklet provided.**

QUESTION ONE

Read the Case Study below carefully and answer the questions that follow:

CARTOGRAPHY, HISTORICAL DEVELOPMENT AND APPLICATION

The origins of cartography can be traced back to ancient societies, such as the Babylonias , Romans and Greeks, where early maps were more artistic than functional. Over time, Cartography evolved significantly, especially with the advancements in technology, moving from the use of basic materials like parchment to sophisticated tools like telescopes and compasses. The printing press further revolutionized map-making by facilitating mass production. In modern times, Cartography incorporates advanced map – making including satellites and aerial photography, enabling the dynamic mapping of not just earth but also other celestial bodies.

Geographical information systems (GIS) have become essential allowing cartographers to create interactive maps and analyze data for various applications, such as tracking disease outbreaks, managing urban planning or just locating places in the world regions. The principles of digital mapping including the use of GPS, have transformed the way maps are created and utilized, providing accurate, real-time visual representations that enrich our understanding of geography. Cartography, beyond the physical representation of geographical area, offers a glimpse into the lives and practices of ancient and modern civilization. In its earliest forms, cartography was more artistic than factual with the improvement in the quality of maps and charts more improved and accurate representation of the word was done.

Mapping dates back to the Babylonian period and ancient Rome, China, India and Greece. Early cartographic tools included parchment and ink, the compass and telescope and later the printing press, which enabled mass productions and technologies to preserve maps. In the 21st century, satellites, aerial photography and special software produce modern electronic technology maps that dynamically map earths, planets and the moon. Using geo information systems visualization not only produce maps but also can

truck products, follow the spread of disease and produce more useful information. The earliest specimens of mapping and the history of cartography dates back to approximately 2300 BCE. This is the period Babylonian maps were drawn on clay tablets. Historians believe that earlier efforts by mankind to communicate concerning environment include the use of bark and skins to scratch out routes, locations and hazards. Also represented on early maps are the location of dependable water springs, enemies, hunting trials and dangers. American Indians painted star charts on elk skin to guide their right-time treks, while other early maps were painted on cloth, cut in stone or sketched on skin, wood or bone.

In an attempt to meet the realities of new generations, cartography has expanded in the 18th century to create more accurate information and details. While early mapmakers were primarily travellers and explorers, the new cartographers are scientists. Their maps often include explanatory notes and efforts to demonstrate the reliability of their illustrations. Advanced instruments have helped improve the accuracy of maps and the ability to preserve and store them, this includes the telescope which raised the bar of astronomical observations, the chronometer, quadrant and venier scale which made it easier to compute longitude and depict other topographic features. The printing press enabled faster and mass production of maps, while lithographic and photochemical processes helped preserve maps by resisting moisture, wear and tear.

With the advent of world war I and II, the military became increasingly interested in maps. Domestic mapping tasks – were first assigned to civilian organizations such as the US geological survey. Britain's ordinance survey and France's institute- Geographique National were handed to the US Army Topographic command, the Navy's oceanographic office and the Air force's Auronautical chart service. In France, the carte geometrique de la France was an important national survey in 1748 resulting in a new map of the country, while great Britain sponsored numerous charting developments and navigation facility improvements.

After the world war years, areas of unmapped parts of the earth were explored by the US Air force, giving rise to the world Aeronautical charts used by many countries for basic

data. Military mapping also resulted in the establishment of common symbols, scales a... formats shared among all country members. After world war II, the United Nations offered advisory mapping assistance to countries interested in planning roads, railways and other economic development programmes.

Cartography achievements during the 1700s and 1800s included charts for prevailing winds, currents and tides. Edmond Harkley's oceanography magnetic chart, the proposal that the prime Meridian for longitude should pass through Greenwich. In 1891, the first international map of the world was proposed by the international Geographical congress. Inherent challenges in the construction of world maps include projection of the distortion of the Earth's surface and knowledge required to produce them. As a result maps are more focused on thematic representations. Choropleth maps contrast differences in regions by the use of colour, hue and intensity. Geological maps depict fault lines underlying rock characteristics and substance structures.

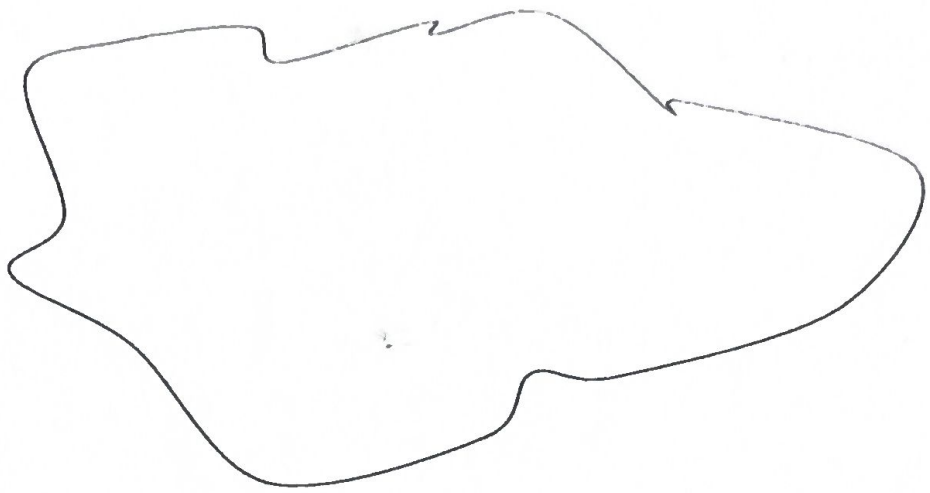
In Cartography, symbols are used to determine how information on a map is coded to convey information to readers. Every map has a legend or key, some are universal while some are specific to a certain type of map. In the 20th century, cartographers use satellite or aerial photography. Map information can be stored digitally in software as Google earth. Modern cartographic techniques include digital mapping the best known examples of digital mapping is the Global positioning system (GPS)

Required:

a) Assess five significance of Cartography as a branch of geography. **(10 marks)**

b) Examine any five applications of digital Cartography in geographical studies. **(10 marks**

c) Using the knowledge acquired from this unit, Compute the area of the irregular land surface below: (Scale 1cm:1Km)



(5 marks)

QUESTION TWO

a) Examine three applications of Isopleths in Cartography. **(6 marks)**

b) Analyze five skills acquired from map reading and interpretation. **(5 marks)**

c) With examples explain the application of choropleths in mapping. **(4 marks)**

QUESTION THREE

a) Analyze five characteristics of a good map. **(5 marks)**

b) Evaluate any five applications of cartography in the ancient time. **(5 marks)**

c) Analyze application of the following maps in cartography.

(i) Bathymetric maps

(ii) Ethnographical maps

(iii) Thematic maps

iv) Google maps

v) Pictorial maps **(5 marks)**

QUESTION FOUR

a) Examine three significance of map revision. **(6 marks)**

b) Analyze three techniques of map revision. **(9 marks)**

QUESTION FIVE

a) John a geography teacher was teaching a grade eight class on cartography. Propose the concept he would teach his students. **(3 marks)**

b) Analyze five significance of information indicated on the map margins. **(10 marks)**

c) Explain the concept of map reading. **(2 marks)**

QUESTION SIX

a) Assess five significance of Topographic maps in Cartography. **(10 marks)**

b) Using knowledge acquired from this unit compute the length of the drainage Pattern below. (Scale 1 cm: 2 km) **(5 marks)**