

KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2017

Marks Scored:

Level : B. E.
Year : IV

Course : GEOM 406
Semester : I

Exam Roll No. : Time: 30 mins.

F. M. : 10

Registration No. :

Date **APR 13 2017**

SECTION "A"

[20 Q. × 0.5 = 10 marks]

1. In the context of evolving SDI, the oldest mechanism used to share data is:
a. File transfer b. Clearing houses c. GIS Portals d. Services architecture
2. ISO standard 19115:2003 Geographic information describes:
a. Web Map Server Interfaces b. Metadata
c. LBS-Tracking and Navigation d. Simple feature access
3. Standards for big data and smart cities are published by the organisation(s):
a. ISO and IEC b. ISO c. OGC d. W3C
4. Catalog Services for the Web (CSW) is one of the OGC standards that:
a. provides access to raster data b. provides access to metadata of geo-services
c. provides access to remote GIS operations d. provides access to vector data
5. All of the following bodies are mandated to prepare metadata standards except:
a. SDTS b. CSDGM c. W3C Consortium d. Dublin Core
6. The ISO 19115 metadata record component containing information about customs, user-based, domains or conditionality of the standards is:
a. Reference system information b. Distribution information
c. Application schema information d. Metadata extension information
7. The responsibility of _____ is to define criteria by which geographically related information could be located and used by posing a fielded or full-text query
a. Catalog Administrator b. Gateway Manager
c. Catalog User d. Originator of metadata
8. Digital catalog services contain which of the following feature that is absent in traditional catalogs.
a. Publication information b. Structural information
c. Timestamp d. Locational information
9. _____ is one of the catalog implementation model that allows personnel and networking resources to be focused on managing a single service and computer within an organisation
a. Alternative approach b. Corporate approach
c. Consortium approach d. Workgroup approach
10. Which of the following catalog interface is not used by Geonetwork?
a. OGC CSW 2.0 b. KML c. Z39.50/ISO23950 d. OAI-PMH

11. The proprietary spatial data formats for geospatial data delivery are produced by the organisation:
 - a. ISO/TC 211
 - b. ESRI
 - c. DIGEST
 - d. SDTS
12. Users may leverage _____ to provide specialized capabilities supporting visualization of geospatial information
 - a. Portal Services
 - b. Portrayal Services
 - c. Catalog Services
 - d. Data Services
13. Arrange in correct order the role of geoportal in SDI
 - a. publish, search, discover, consume
 - b. search, discover, publish, consume
 - c. search, discover, consume, publish
 - d. consume, publish, search, discover
14. The current globally accepted geoportal design belongs to which generation of geoportal:
 - a. First generation
 - b. Second generation
 - c. Third generation
 - d. Fourth generation
15. In Geonetwork different services like WMS, WFS, WCS are provided using:
 - a. ArcIMS
 - b. ArcGIS server
 - c. Geoserver
 - d. Map context encoding
16. Policies that prevent the problem of data duplication are termed as:
 - a. Personal Privacy Policy
 - b. Intellectual Property Rights Policy
 - c. Access Policy
 - d. Custodianship/Ownership Policy
17. In NSDI organizational structure, the role of technical working group is:
 - a. Facilitate the implementation of the decisions
 - b. Make recommendations to the Forum or Network
 - c. undertake the networking management functions and linkage with the other SDI initiatives
 - d. Draft standards, policies, suggest capacity building programs
18. The Open Data Commons Open Database License for databases uses which of the following creative commons license?
 - a. Attribution-ShareAlike
 - b. Attribution-Noncommercial-ShareAlike
 - c. Attribution-Commercial-NoDerivative
 - d. Attribution-Noncommercial-NoDerivative
19. Cloud computing providers offer their services in various models. In which model does WMS, CSW fit in?
 - a. DAAS (Data storage as a service)
 - b. IAAS (Infrastructure as a service)
 - c. PAAS (Platform as a service)
 - d. SAAS (Software as a service)
20. Web 2.0 technique that uses syndication technology, such as RSS to notify users of content changes:
 - a. Signals
 - b. Links
 - c. Tags
 - d. Extensions

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SECTION "B"

(Short answer question)

[6 Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. How does SDI improve regional cooperation? Explain the institutional arrangements required for any SDI. [2+2=4]
2. Discuss the need for geospatial metadata. [4]
3. What are the main features of a Geonetwork? List few standards that Geonetwork uses. [2+2=4]
4. Define web mapping and personalized web maps. [2+2=4]
5. Define geoportal. Elaborate publish-find-bind principle of a geoportal. [1+3=4]
6. List few emerging technologies that are being used to improve SDI. Establish the benefits of using cloud computing for SDI. [1+3=4]
7. Write short notes on: [2+2=4]
 - a. Web 2.0
 - b. W3C Standards

SECTION "C"

(Long answer question)

[2 Q × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. Discuss the role of standards in SDI. Elaborate the components of OGC Service Architecture. Which standard would you follow to support metadata management? Why? Explain with example [2+4+2]
9. Define distributed catalogue services. Describe the roles played by different stakeholders to maintain such catalogues. Explain any two models available for implementing catalog services. [2+4+2]
10. Define custodianship policy. Explain the conceptual institutional model used for implementation of Nepal's SDI. If you are given the task to design an organizational structure to develop SDI, what factors should you consider? [2+4+2]

