



**UGANDA INSTITUTE OF INFORMATION AND COMMUNICATIONS
TECHNOLOGY**

**END OF SEMESTER ONE EXAMINATIONS
ACADEMIC YEAR 2025/2026**

DEPARTMENT: ICT
YEAR OF STUDY: ONE
PROGRAMME: DIPLOMA IN E-GOVERNANCE & DIGITAL
TRANSFORMATION (EGDT)
COURSE: DIGITALIZATION OF THE POLICY MAKING PROCESS
COURSE CODE: EDT1102
DATE: THURSDAY 11TH DECEMBER, 2025
TIME: 09:00 AM – 12:00 NOON
DURATION: 3 HOURS

INSTRUCTIONS:

- (a) This paper consists of two sections A and B
- (b) Section A carry 40 marks and is compulsory
- (c) Attempt any THREE questions from section B
- (d) Any number in section B carry equal marks
- (e) Credit will be given for use of relevant examples and illustrations
- (f) Begin each number on a new page of the answer sheet

SECTION A [40 MARKS]

Attempt **ALL** the Questions in this section.

This section consists of 40 multiple choice questions each for 1 mark.

Make a table of two columns having numbers 1 to 20 and 21 to 40 in the answer booklet.

Write a letter corresponding to the best answer to each of the questions.

1. Which of the following best defines digitization in policy-making?
 - A. Replacing government staff with robots
 - B. Using digital technologies in the formulation and implementation of policies
 - C. Converting paper to PDF
 - D. Privatizing public services
2. Which technology is **not mentioned** as part of digitization in policy-making?
 - A. Artificial Intelligence
 - B. Big Data Analytics
 - C. Typewriters
 - D. Cloud Platforms
3. A key feature of digitized policy-making is
 - A. Paper-based filing
 - B. Real-time communication and feedback
 - C. Manual workflows
 - D. Offline reporting
4. Which of the following is a scope of digitization?
 - A. Increasing paperwork
 - B. Paper-based workflows
 - C. Using online platforms for consultations
 - D. Removing citizen involvement
5. One challenge of digitization is:
 - A. Increased transparency
 - B. Reduced bureaucracy
 - C. Digital divide
 - D. Faster processing
6. Data-driven decision making emphasizes
 - A. Guesswork
 - B. Intuition
 - C. Evidence and verifiable data
 - D. Political influence
7. A benefit of data-driven decision-making is
 - A. Increases subjectivity
 - B. Ignores future trends
 - C. Improves accuracy and reliability
 - D. Encourages manual record keeping
8. Which of the following is a data source?
 - A. Rumors
 - B. Administrative records
 - C. Posters
 - D. Workplace gossip
9. Sensors and IoT devices are used to collect
 - A. Physical signatures
 - B. Smart city data
 - C. Printed surveys
 - D. Tax receipts only
10. **Agenda setting** in policy development involves
 - A. Funding approval
 - B. Identifying problems using data
 - C. Publishing policies
 - D. Removing policies

11. E-participation platforms allow
 - A. Citizens to vote politicians out
 - B. Submission of feedback on draft laws
 - C. Staff recruitment
 - D. Financial audits
12. Which digital tool supports collaborative policy co-creation?
 - A. Television
 - B. Radio
 - C. Google Docs
 - D. Billboards
13. Open data initiatives promote
 - A. Corruption
 - B. Transparency
 - C. Closed governance
 - D. Secrecy
14. A benefit of transparent policy-making is
 - A. Hiding government operations
 - B. Encouraging accountability
 - C. Restricting information
 - D. Excluding citizens
15. Digital voting is an example of
 - A. Citizen suppression
 - B. Direct democratic participation
 - C. Cybercrime
 - D. Political campaigning
16. Policy simulation and modeling are mainly used to
 - A. Delay implementation
 - B. Forecast impacts of policy actions
 - C. Increase paperwork
 - D. Reduce stakeholder involvement
17. Agent-based models simulate
 - A. Only government officials
 - B. Individual actors and their behavior
 - C. Cloud servers
 - D. Network cables
18. Which simulation type uses feedback loops and stock-flow structures?
 - A. System dynamics
 - B. Agent-based
 - C. Statistical regression
 - D. Simulation games only
19. Which step comes first in running a simulation?
 - A. Running the scenario
 - B. Designing the model framework
 - C. Defining the policy problem
 - D. Cleaning data
20. Tools such as Vensim, STELLA, and NetLogo are used for
 - A. Transporting data
 - B. Modeling and simulation
 - C. Social media analytics
 - D. Payroll management
21. Real-time monitoring refers to
 - A. Tracking policy outcomes continuously using technology
 - B. Manual tracking of outcomes
 - C. Reporting once per year
 - D. Predicting elections
22. One importance of real-time monitoring is
 - A. Prevents corrective actions
 - B. Enables timely adjustments
 - C. Encourages secrecy
 - D. Reduces transparency
23. Mobile data collection apps help
 - A. Destroy field data
 - B. Allow field officers to report instantly
 - C. Reduce data validity
 - D. All of these

24. IoT devices are used to monitor
A. Only social media B. Environment and infrastructure
C. Fictional stories D. Historical archives
25. The adaptive policy cycle includes
A. Implement → Ignore → Repeat B. Monitor → Evaluate → Adjust → Implement
C. Delay → Avoid → Adapt → Delete D. Formulate → Sleep → Forget
26. A major cybersecurity concern is
A. Cloud backups B. Unauthorized access to policy data
C. Open data transparency D. Digital literacy
27. Resistance to change occurs, because
A. Bureaucrats prefer manual processes B. All staff are highly digital
C. Technology is flawless D. Government systems are perfect
28. Data privacy concerns relate to
A. Protecting citizen information B. Sharing information freely
C. Printing sensitive data D. Removing digital systems
29. Digital divide refers to:
A. Citizens equally accessing digital tools B. Unequal access to digital technologies
C. A new government building D. A type of cloud service
30. High implementation costs affect
A. Digital adoption B. Manual filing
C. Public sector salaries D. Hardware recycling
31. Automation helps allocate resources by:
A. Increasing paperwork B. Reducing administrative overhead
C. Slowing decisions D. Hiring more staff unnecessarily
32. E-procurement systems ensure
A. Bias and favoritism B. Opaque transactions
C. Fair and efficient resource allocation D. Reduced competition
33. Predictive analytics support
A. Long-term planning B. Guesswork
C. Manual filing D. Random budgeting
34. Smart meters help track
A. Election results B. Environmental resources
C. Text messages D. School attendance
35. AI helps optimize resources in which sector?
A. Education B. Healthcare
C. Welfare D. All of the above
36. Blockchain technology enables
A. Corrupt procurement B. Secure and transparent records
C. Removing digital footprints D. Increasing opacity

37. VR/AR technologies are used for
 - A. Manual data entry
 - B. Immersive policy simulations
 - C. Removing dashboards
 - D. Closing public access
38. A key future-proofing strategy is
 - A. Avoiding new technologies
 - B. Using outdated legal frameworks
 - C. Investing in scalable infrastructure
 - D. Delaying training
39. Ethical digital governance focuses on
 - A. Algorithmic bias and privacy protection
 - B. Increasing surveillance only
 - C. Eliminating all digital systems
 - D. Promoting secrecy
40. A major implication of emerging technologies is:
 - A. Reactive policy-making
 - B. More personalized public services
 - C. Less data usage
 - D. No need for digital skills

SECTION B [60 MARKS]

Attempt Only Three Questions in this section.

Question 1

The Ministry of Agriculture in Uganda has long relied on paper-based systems for farm registration, subsidy allocation, and monitoring crop production. As part of its reform agenda, the government decides to digitize policy-making processes to improve efficiency and transparency.

They introduce a new Digital Agriculture Policy Platform (DAPP) that integrates farmer databases, satellite data for crop monitoring, and online portals for subsidy applications. The platform also enables real-time feedback from citizens, automated approval workflows, and dashboards for policy monitoring. However, six months into implementation, several issues arise:

- Many farmers in rural regions have limited internet access.
- Some ministry staff resist the new system, preferring manual paperwork.
- Concerns about data privacy emerge after media reports of unauthorized access to the farmer database.
- Despite these challenges, the platform has reduced approval time for subsidies from 3 months to 3 weeks.

- (a) Explain how this case illustrates the concept of digitization in policy-making. **(6 marks)**
- (b) Assess two benefits realized by the Ministry after digitization. **(4 marks)**
- (c) Identify and discuss two challenges faced in implementing the DAPP system. **(4 marks)**
- (d) Recommend two strategies to enhance efficiency and reduce implementation challenges. **(6 marks)**

Question 2

Uganda has been facing persistent challenges in public health service delivery, including medicine shortages, long waiting times, and uneven distribution of healthcare personnel. The Ministry of Health launches a National Health Data Intelligence System (NHDIS) to strengthen data-driven decision making. The system collects data from hospital administrative records, digital patient files, pharmacy inventories, and mobile health reporting apps. Machine learning tools are used to predict demand for essential medicines and identify high-risk disease zones.

Six months after implementation:

- Waiting times in major hospitals have dropped by 20%.
 - Medicine stockouts have reduced drastically.
 - However, concerns have emerged about data quality because some rural facilities still record patient data manually.
 - Policymakers also struggle to interpret analytics dashboards, causing delays in decision-making.
- (a) Explain the importance of data-driven decision making in the Ministry's approach to improving health services. **(6 marks)**
- (b) Identify and describe two data sources used in the NHDIS. **(4 marks)**
- (c) Discuss two challenges faced in the data collection and analysis process. **(4 marks)**
- (d) Recommend two strategies to improve the use of data in health policy development. **(6 marks)**

Question 3

Kampala City has been experiencing increasing complaints about poor waste collection, illegal dumping, and irregular garbage truck schedules. To improve service delivery and involve citizens more effectively, the city authorities introduced a Smart Waste Engagement Initiative (SWEI).

The initiative includes:

- An e-participation portal where residents can submit feedback on the new Waste Management Policy.
- A mobile reporting app called "CleanCity App" for reporting uncollected waste and illegal dumpsites.
- Social media consultations on Facebook and X (Twitter) for collecting suggestions on proposed waste management reforms.
- A digital dashboard showing garbage collection coverage, complaint resolution rates, and contractor performance.

After nine months:

- Reports from residents increased by 60%, enabling faster response.
- Citizens appreciate the transparency of the dashboard.
- However, some low-income areas lack smartphones, limiting their participation.
- Waste contractors complain that social media criticisms are sometimes inaccurate or exaggerated.

- (a) Explain how the SWEI demonstrates the use of digital tools for stakeholder engagement. **(6 marks)**
- (b) Assess two ways the initiative promotes transparent and open policy-making. **(4 marks)**
- (c) Identify two challenges Kampala City faces in implementing the initiative and explain their impact. **(6 marks)**
- (d) Propose two strategies to enhance citizen participation in SWEI. **(4 marks)**

Question 4

Mbale City has been experiencing increasing water shortages due to population growth, climate change, and inefficient infrastructure. The Ministry of Water develops a Water Supply Simulation Model (WSSM) to forecast the long-term effects of different policy options.

The WSSM includes:

- System dynamics modeling of water demand, reservoir levels, and treatment capacity.
- Three scenarios tested:
 1. Status Quo – no policy change.
 2. Demand Management Policy – public awareness campaigns + smart meters.
 3. Infrastructure Expansion – construction of a new water treatment plant.
- Data inputs include population projections, rainfall patterns, current pipeline losses, and household consumption data.

After the simulation:

- The Status Quo scenario results in critical shortages within 4 years.
 - The Demand Management Policy reduces shortages by 25%.
 - The Infrastructure Expansion eliminates shortages but requires high upfront investment.
 - Stakeholders ask the Ministry to justify the proposed investment using the simulation results.
- (a) Explain the concept of policy simulation and modeling in the context of this case. **(6 marks)**
 - (b) Describe two types of models used or implied in the WSSM. **(4 marks)**
 - (c) Identify and describe two key steps followed in running the WSSM simulation. **(4 marks)**
 - (d) Using results from the simulation, recommend the most appropriate policy option and justify your answer. **(6 marks)**

Question 5

The Ministry of Education has launched a National School Feeding Programme (NSFP) aimed at improving student attendance and nutrition in rural areas. Initially, data on food deliveries, attendance, and nutrition outcomes was collected manually from district officers, resulting in delays of up to three months before issues were detected.

To improve responsiveness, the Ministry implemented a real-time monitoring system using:

- Mobile data collection apps for head teachers to report daily attendance and food stocks.
- IoT-enabled smart scales to track food deliveries and usage.
- A national dashboard showing district-level indicators such as attendance trends, food shortages, and expenditure.
- AI anomaly detection to flag irregular patterns such as sudden declines in attendance or discrepancies in food stock usage.

Within the first two months, real-time data revealed that three districts consistently under-reported food usage, prompting quick audits. The Ministry also adjusted delivery schedules in drought-hit areas where attendance temporarily declined.

- (a) Explain why real-time monitoring was necessary for the School Feeding Programme **(5 marks)**
- (b) Identify and describe any three digital tools used in this monitoring system. **(5 marks)**
- (c) Analyze how real-time data supported adaptive policy management in this case. **(5 marks)**
- (d) Discuss two accountability benefits that emerged from the new monitoring system. **(5 marks)**

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