

**University of Asia Pacific**  
**Department of Civil Engineering**  
**Mid Term Examination Spring 2023**  
**Program: Masters in Engineering (Civil)**

M.Sc

Course Title: Construction Planning and Management  
Time: 1 Hour

Course Code: CE6005  
Full Marks: 20

- 1(a) Describe briefly about basic resources in the view of construction management and explain where to focus on managing those resources? 1.5
- (b) What is the difference between Planning and Scheduling? 1
- (c) Write down the obligations of an employer to ensure safety in construction. 1.5
- 2(a) What is meant by Project? Describe its characteristics. 1.5
- (b) What is WBS? Why is WBS important? 1
- (c) Construction is complex and challenging – Explain why. 1.5
- 3(a) When will you use PERT instead of CPM method? 1
- (b) Describe briefly the drawbacks of Gantt Chart. 1
- (c) Draw the network diagram, Determine Critical Path, Total Duration of the Project, Free Float and Total Float from the following information: 6

Activity	Predecessor	Duration (Days)
A	-	8
B	-	9
C	A	9
D	A, B	4
E	A	6
F	C	5
G	C, D, E	7

- 4(a) Explain  $Q = P/E$  1
- (b) How will you ensure quality in construction? 1.5
- (c) Why is construction safety in Bangladesh not up to the standard? Explain. 1.5

**University of Asia Pacific**  
**Department of Civil Engineering**  
**Mid-Term Examination Spring 2023**  
**Program: B.Sc. in Civil Engineering**

Course Title: Structural Design of Pavements

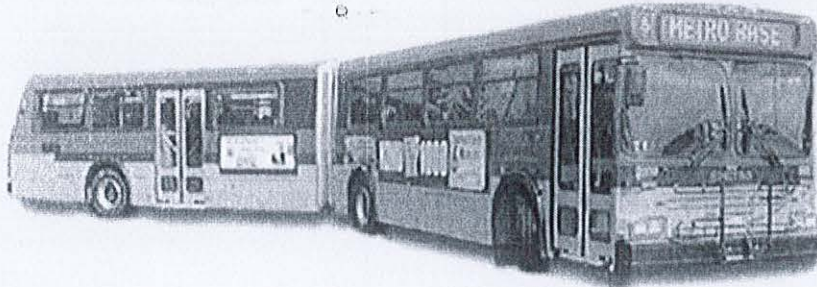
Course Code: CE 6505

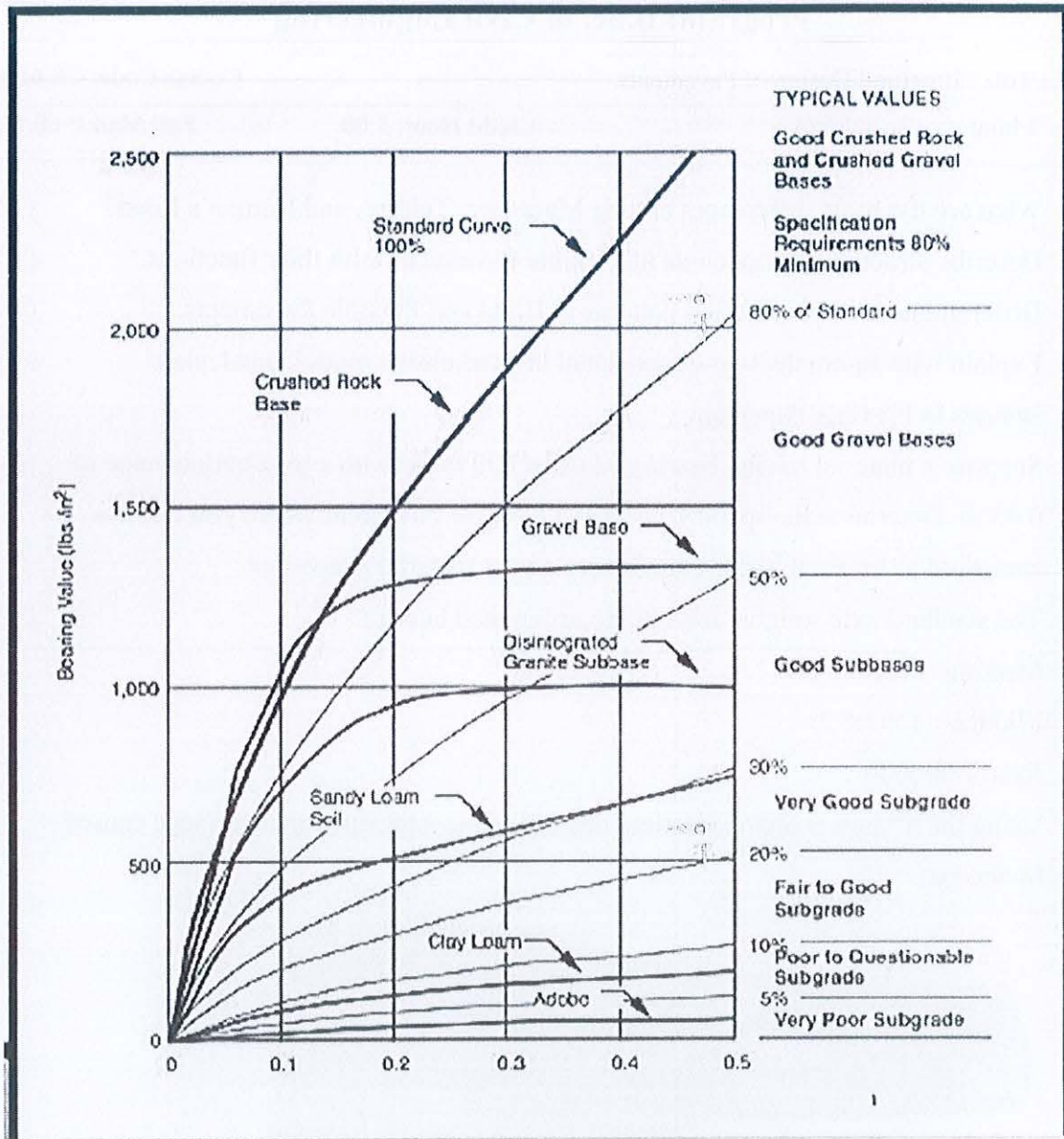
Time: 1 hour

Credit Hour: 3:00

Full Marks: 60

1. What are the basic differences among Macadam, Telford, and Roman's Road? (12)
2. Describe structural components of Flexible Pavements with their functions. (12)
3. Differentiate load distribution patterns in Rigid and Flexible Pavements. (10)
4. Explain with figure the two-dimensional layered elastic model to calculate stresses in Flexible Pavement. (10)
5. Suppose a material having bearing value of  $800 \text{ lb/in}^2$  with a penetration value of  $0.43 \text{ in}$ . Determine the specific layer in a Flexible Pavement where you can use such kind of material and also comment on the material properties. (6)
6. The standard axle weights for a metro articulated bus are: (10)  
Steering = 13,000 lb  
Middle = 15,000 lb  
Rear = 9000 lb  
Using the 4<sup>th</sup> power approximation, determine the total equivalent damage caused by the bus.





**University of Asia Pacific**  
**Department of Civil Engineering**  
**Mid Term Examination, Spring 2023 Semester**  
**Program: Master of Science in Civil Engineering**

Course code: CE 6615

Course title: Development of water resources project

Time: **1 hour**

Total marks: **20**

**Answer all questions**

1. UN Sustainable Development Goal 2 seeks sustainable solutions to end hunger in all its forms by 2030 and to achieve food security. Do you think that sustainable development goal 2 is very much interlinked with effective planning and design of water resources development projects? Justify your answer with practical examples. (7.5)
2. Do you think that international water cooperation is necessary to plan and design of sustainable irrigation and flood management projects along international rivers basins? Justify your answer with practical examples. (7.5)
3. Summarize five benefits of integrated water resources development and management for the planning, design and implementation of drinking water, irrigation and flood management projects with proper justification and practical examples. (5)

**University of Asia Pacific**  
**Department of Civil Engineering**  
**Mid-Term Examination Spring 2023**  
**Program: B.Sc. in Civil Engineering**

Course Title: Fecal Sludge Management  
Time: 1 hour  
Name:

Credit Hour: 3.0

Course Code: CE 6315  
Full Marks: 20  
ID:

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1. What is faecal sludge?
  - a) Solid waste from households
  - b) Organic matter from agricultural activities
  - c) Human excreta and water used for flushing
  - d) Industrial waste
2. Which of the following is a common method of onsite faecal sludge management?
  - a) Incineration
  - b) Composting
  - c) Landfilling
  - d) Sewerage system
3. Which stage of faecal sludge management involves the collection of sludge from onsite sanitation systems?
  - a) Treatment
  - b) Disposal
  - c) Transportation
  - d) Containment
4. Which technology involves the use of aerobic microorganisms to break down faecal sludge?
  - a) Anaerobic digestion
  - b) Vermicomposting
  - c) Incineration
  - d) Aerobic digestion
5. Which factor contributes to the generation of faecal sludge in urban areas?
  - a) Decreased population density
  - b) Widespread use of flush toilets
  - c) High availability of water
  - d) Limited sanitation facilities
6. What is the primary objective of faecal sludge management?
  - a) To generate electricity
  - b) To eliminate all organic matter
  - c) To safely contain and treat human waste
  - d) To convert waste into reusable plastic products
7. What is the main environmental concern related to improper faecal sludge management?
  - a) Soil erosion
  - b) Water pollution
  - c) Air pollution
  - d) Noise pollution
8. Which of the following is NOT a potential reuse option for treated faecal sludge?
  - a) Fertilizer production
  - b) Biogas generation
  - c) Drinking water source
  - d) Irrigation
9. What is the role of septic tanks in faecal sludge management?
  - a) Treating faecal sludge to drinking water standards
  - b) Collecting and storing faecal sludge for disposal
  - c) Converting faecal sludge into solid waste
  - d) Directly discharging faecal sludge into water bodies

10. Which organization sets international guidelines and standards for faecal sludge management?
  - a) World Health Organization (WHO)
  - b) United Nations Educational, Scientific and Cultural Organization (UNESCO)
  - c) International Monetary Fund (IMF)
  - d) Greenpeace International
11. What is the key difference between "sewer-based sanitation" and "non-sewer sanitation" in terms of faecal sludge management?
  - a) Sewer-based sanitation involves using toilets, while non-sewer sanitation does not.
  - b) Non-sewer sanitation involves treating faecal sludge, while sewer-based sanitation does not.
  - c) Sewer-based sanitation relies on open defecation, while non-sewer sanitation does not.
  - d) Non-sewer sanitation relies on incineration, while sewer-based sanitation does not.
12. Which technology converts biodegradable waste in faecal sludge into methane-rich gas?
  - a) Anaerobic digestion
  - b) Aerobic digestion
  - c) Composting
  - d) Incineration
13. Which factor determines the frequency of desludging septic tanks?
  - a) Distance from the nearest landfill
  - b) Monthly household income
  - c) Size of the septic tank
  - d) Color of the septic tank
14. Which of the following is NOT a challenge in faecal sludge management?
  - a) Lack of proper buildings
  - b) Limited availability of water
  - c) Social stigma associated with sanitation
  - d) Insufficient funding for sanitation projects
15. What is the term used to describe the removal of accumulated solids from septic tanks?
  - a) Desludging
  - b) Aeration
  - c) Filtration
  - d) Sedimentation
16. Which stage of faecal sludge management involves reducing the volume of faecal sludge through mechanical processes?
  - a) Collection
  - b) Transport
  - c) Treatment
  - d) Disposal
17. In which type of soil is the percolation rate of effluent from septic tanks typically the fastest?
  - a) Clay soil
  - b) Sandy soil
  - c) Rocky soil
  - d) Loamy soil
18. Which approach emphasizes the importance of a city-wide perspective in faecal sludge management?
  - a) Centralized management
  - b) Decentralized management
  - c) Individual household management
  - d) International management
19. Which of the following is a key principle of sustainable faecal sludge management?
  - a) Discharging untreated sludge into water bodies
  - b) Ignoring the role of social factors in management strategies
  - c) Promoting the use of single-pit latrines
  - d) Protecting public health and the environment
20. Which microorganisms are responsible for breaking down organic matter in anaerobic digestion of faecal sludge?
  - a) Algae
  - b) Bacteria
  - c) Earthworms

- d) Fungi
21. What is the main drawback of open defecation in terms of faecal sludge management?
    - a) It is expensive to implement
    - b) It requires a lot of water
    - c) It spreads diseases and pollutes the environment
    - d) It doesn't contribute to water scarcity
  22. Which of the following can be a potential barrier to effective faecal sludge management in low-income areas?
    - a) High levels of education
    - b) Availability of advanced technologies
    - c) Lack of community engagement
    - d) Abundant water resources
  23. What is the purpose of co-composting in faecal sludge management?
    - a) To generate electricity
    - b) To convert sludge into plastic products
    - c) To improve the quality of compost
    - d) To produce synthetic fertilizers
  24. Which of the following is a suitable method for treating faecal sludge in densely populated urban areas?
    - a) Open dumping
    - b) Direct discharge into water bodies
    - c) Landfilling
    - d) Anaerobic digestion
  25. Which of the following is a potential health risk associated with improper faecal sludge management?
    - a) Increased soil fertility
    - b) Spread of waterborne diseases
    - c) Enhanced crop growth
    - d) Improved air quality
  26. Which of the following is a characteristic of well-designed onsite sanitation systems?
    - a) Minimal human use
    - b) Frequent release of untreated sludge
    - c) Rapid degradation of waste
    - d) Generation of toxic gases
  27. In faecal sludge management, what is the significance of a safe disposal site for treated sludge?
    - a) It provides a location for illegal dumping
    - b) It prevents further treatment
    - c) It minimizes risks to human health and the environment
    - d) It encourages open defecation
  28. Which of the following is a benefit of using biogas generated from faecal sludge treatment?
    - a) It is a strong-smelling gas that repels pests.
    - b) It reduces greenhouse gas emissions.
    - c) It is harmful to crops.
    - d) It increases water pollution.
  29. Which of the following is a potential disadvantage of decentralized faecal sludge management systems?
    - a) Reduced dependence on local communities
    - b) Limited control over treatment processes
    - c) Increased energy consumption
    - d) Decreased operation and maintenance costs
  30. Which of the following is a potential challenge in the use of drying beds for faecal sludge treatment?
    - a) Excessive production of biogas
    - b) Dependence on electricity for operation
    - c) Seasonal variations in treatment efficiency
    - d) Rapid treatment process

31. What is the significance of proper sludge treatment and disposal in preventing waterborne diseases?
  - a) It reduces the availability of clean water resources.
  - b) It eliminates the need for sanitation facilities.
  - c) It prevents contaminated sludge from entering water bodies and groundwater.
  - d) It encourages the spread of diseases for natural immunity.
32. Which of the following methods involves the use of constructed wetlands for faecal sludge treatment?
  - a) Aerobic digestion
  - b) Incineration
  - c) Anaerobic digestion
  - d) Phytoremediation
33. Which approach involves promoting the use of improved sanitation technologies within a community?
  - a) Centralized management
  - b) Decentralized management
  - c) Individual household management
  - d) Unsanctioned management
34. What is the term for the small, solid particles that settle at the bottom of septic tanks during the treatment process?
  - a) Scum
  - b) Effluent
  - c) Sediment
  - d) Biogas
35. What is the first step in planning a faecal sludge management system for a community?
  - a) Designing treatment technologies
  - b) Identifying stakeholders
  - c) Constructing sanitation facilities
  - d) Implementing public awareness campaigns
36. What role does baseline data play in planning faecal sludge management systems?
  - a) It provides information on the latest sanitation technologies.
  - b) It helps in determining the most profitable treatment methods.
  - c) It offers a starting point to assess the existing situation and monitor progress.
  - d) It outlines financial projections for the project.
37. What is the primary aim of a stakeholder engagement strategy in faecal sludge management planning?
  - a) Excluding local communities from decision-making
  - b) Minimizing the involvement of government agencies
  - c) Promoting open dialogue and participation
  - d) Focusing solely on financial aspects
38. What is the significance of incorporating gender considerations into faecal sludge management planning?
  - a) Gender considerations are not relevant to sanitation planning.
  - b) Gender considerations can lead to increased project costs.
  - c) Addressing gender issues promotes equity and inclusivity in sanitation solutions.
  - d) Gender considerations only affect urban areas.
39. Which of the following is a potential challenge in faecal sludge management planning for densely populated urban areas?
  - a) Limited availability of suitable treatment sites
  - b) Overwhelming interest from investors
  - c) Lack of sanitation technologies
  - d) Strong community support for open defecation
40. What is the primary focus of the monitoring and evaluation phase in faecal sludge management planning?
  - a) Designing new sanitation technologies
  - b) Generating public awareness
  - c) Assessing the effectiveness and sustainability of the implemented solutions
  - d) Identifying potential sources of funding
41. Which aspect of faecal sludge management planning involves estimating the costs associated with implementing and maintaining the proposed solutions?
  - a) Designing treatment technologies
  - b) Identifying stakeholders
  - c) Assessing the existing situation and monitoring progress
  - d) Implementing public awareness campaigns



- a) Risk assessment
  - b) Stakeholder engagement
  - c) Cost analysis
  - d) Public awareness
42. What is the primary purpose of a Shit Flow Diagram (SFD)?
- a) To visualize the flow of water in a sanitation system
  - b) To depict the journey of human waste through the environment
  - c) To illustrate the distribution of water sources in a community
  - d) To outline the lifecycle of wastewater treatment plants
43. What do the arrows in a Shit Flow Diagram represent?
- a) Paths taken by birds in the area
  - b) Movements of underground water sources
  - c) Direction of the flow of human excreta and wastewater
  - d) Travel routes of tourists in the region
44. What type of information does an SFD provide about sanitation systems?
- a) Detailed design specifications
  - b) Technical parameters of wastewater treatment plants
  - c) Locations of water sources and wells
  - d) High-level overview of excreta and wastewater flows
45. Which stakeholders might benefit from understanding an SFD?
- a) Local weather forecasters
  - b) Fashion designers
  - c) Public health officials and policymakers
  - d) Bus drivers in the area
46. In an SFD, what does the size of the boxes usually represent?
- a) The actual dimensions of sanitation facilities
  - b) The volume of water in each sanitation facility
  - c) The percentage of the population using different sanitation methods
  - d) The number of animals present in the region
47. What is the significance of the "Disposal" section in an SFD?
- a) It highlights the location of water distribution points
  - b) It indicates the areas where waste is collected for recycling
  - c) It shows how human waste and wastewater are discarded or treated
  - d) It represents the routes taken by tourists in the community
48. How can an SFD aid in decision-making for sanitation planning?
- a) By providing detailed architectural drawings of sanitation facilities
  - b) By predicting future weather patterns
  - c) By assessing the local economy's growth potential
  - d) By helping identify priority areas for intervention and improvement
49. What does the "Treatment" section in an SFD depict?
- a) The distribution of treatment chemicals in the environment
  - b) The location of hazardous waste disposal sites
  - c) The processes involved in treating human waste and wastewater
  - d) The path taken by treated water to reach households
50. Which of the following is NOT a key element usually found in a Shit Flow Diagram?
- a) Water distribution network
  - b) Treatment facilities
  - c) Collection methods
  - d) Sanitation technologies
51. What is the primary focus of the "Collection" section in an SFD?
- a) Tracking the movement of vehicles in the area
  - b) Identifying potential areas for agriculture
  - c) Illustrating how human waste is generated
  - d) Depicting the methods used to gather human waste and wastewater
52. Who typically creates Shit Flow Diagrams?
- a) Tour guides
  - b) Local artists

- c) Sanitation professionals and researchers
  - d) Construction workers
53. What is the purpose of labeling the arrows in a Shit Flow Diagram?
    - a) To provide additional aesthetic value
    - b) To guide tourists to popular destinations
    - c) To indicate the order of operations in wastewater treatment
    - d) To represent the number of community meetings held
  54. In an SFD, what does the "Contained Pit Latrine" box typically represent?
    - a) A location with no sanitation facilities
    - b) A well-designed wastewater treatment plant
    - c) A household or community using pit latrines
    - d) A designated wildlife conservation area
  55. What is the primary benefit of presenting an SFD in a simplified and easily understandable manner?
    - a) It makes the diagram look more appealing
    - b) It helps children learn about local sanitation practices
    - c) It facilitates communication among stakeholders and decision-makers
    - d) It allows for the inclusion of complex technical details
  56. How does an SFD contribute to raising awareness about sanitation issues?
    - a) By showcasing historical landmarks in the community
    - b) By emphasizing the importance of space exploration
    - c) By presenting a visual representation of sanitation practices and challenges
    - d) By promoting luxury tourism in the area
  57. What is the significance of the "Transport" section in an SFD?
    - a) It highlights the transportation routes of local produce
    - b) It demonstrates how waste is moved from one region to another
    - c) It focuses on the movement of migrating animals in the area
    - d) It outlines the path taken by clean drinking water to reach households
    - e) By promoting the local tourism industry
  58. What type of data is usually collected and analyzed to create an accurate Shit Flow Diagram?
    - a) Historical weather patterns
    - b) Political preferences of the community
    - c) Financial projections for local businesses
    - d) Information about sanitation facilities and practices
  59. How can an SFD be utilized to allocate resources effectively in sanitation planning?
    - a) By highlighting the locations of luxury hotels
    - b) By identifying the areas with the highest number of tourists
    - c) By pinpointing areas where sanitation interventions are most needed
    - d) By showcasing public art installations in the community
  60. How does an SFD contribute to transparency in sanitation planning?
    - a) By keeping all sanitation planning details confidential
    - b) By showcasing the artistic talents of community members
    - c) By providing a clear visual representation of sanitation flows and challenges
    - d) By exclusively sharing the diagram with elected officials
  61. Which of the following is a limitation of Shit Flow Diagrams?
    - a) They require extensive knowledge of advanced mathematics to understand.
    - b) They cannot be used for advocacy or decision-making.
    - c) They may oversimplify complex sanitation systems.
    - d) They are only applicable to densely populated areas.
  62. What is the primary purpose of a Sanitation Safety Plan (SSP)?
    - a) To design aesthetically pleasing sanitation facilities
    - b) To outline emergency response procedures for sanitation workers
    - c) To ensure the safe management of sanitation systems to protect public health
    - d) To improve water supply infrastructure in the community
  63. Who is responsible for developing and implementing a Sanitation Safety Plan?
    - a) Tour operators
    - b) Local farmers
    - c) Sanitation professionals and stakeholders

- d) Weather forecasters
64. What is the relationship between an SSP and public health?
- a) SSPs are unrelated to public health concerns.
  - b) SSPs focus solely on environmental conservation.
  - c) SSPs address health risks associated with poor sanitation and offer strategies for mitigation.
  - d) SSPs target the promotion of luxury tourism.
65. In an SSP, what does the term "sanitation hazards" refer to?
- a) Potential revenue loss from sanitation projects
  - b) Opportunities for increasing environmental pollution
  - c) Conditions that can lead to adverse health effects from poor sanitation
  - d) Advancements in sanitation technology
66. How does an SSP contribute to preventing waterborne diseases?
- a) By encouraging open defecation practices
  - b) By promoting the use of untreated water sources
  - c) By implementing strategies to minimize contamination risks in sanitation systems
  - d) By increasing the sale of bottled water
67. What is the significance of risk assessment in the development of an SSP?
- a) It helps in identifying potential sources of entertainment for tourists
  - b) It outlines strategies for maximizing financial gains from sanitation projects
  - c) It identifies potential hazards and their associated risks to public health
  - d) It determines the most appropriate sanitation technologies for use
68. What role does stakeholder engagement play in the development of an SSP?
- a) Stakeholder engagement is not relevant to SSPs.
  - b) Stakeholder engagement helps in increasing operational costs.
  - c) Stakeholder engagement ensures diverse opinions are ignored.
  - d) Stakeholder engagement ensures that the plan reflects local needs and concerns.
69. Which of the following is a typical component of an SSP?
- a) Political campaign strategies
  - b) Musical concerts
  - c) Emergency response plans
  - d) Theatrical performances
70. What is the primary purpose of an institutional regulatory framework for FSM?
- a) To create complex bureaucratic structures
  - b) To ensure efficient and coordinated management of FSM activities
  - c) To increase administrative burden on sanitation providers
  - d) To discourage community involvement in sanitation planning
71. How does an institutional regulatory framework facilitate the involvement of local communities in FSM?
- a) By excluding community leaders from decision-making processes
  - b) By setting up barriers for community engagement
  - c) By creating channels for community participation, consultation, and feedback
  - d) By mandating compulsory participation in sanitation projects
72. How does the involvement of non-governmental organizations (NGOs) in the institutional framework benefit FSM?
- a) NGOs increase project costs and delays.
  - b) NGOs exclusively focus on organizing music festivals.
  - c) NGOs bring technical expertise, community engagement, and advocacy to FSM efforts.
  - d) NGOs primarily target luxury tourism markets.
73. How can an institutional regulatory framework enhance accountability in FSM projects?
- a) By minimizing transparency and stakeholder engagement
  - b) By shifting responsibility solely to international agencies
  - c) By establishing clear roles, responsibilities, and reporting mechanisms for various stakeholders
  - d) By encouraging unethical practices among sanitation providers
74. What is the role of regulatory agencies within the institutional framework of FSM?
- a) To promote inefficiency and mismanagement of resources
  - b) To establish complex administrative structures
  - c) To ensure compliance with regulations, standards, and guidelines

- d) To limit the involvement of local communities in decision-making
75. What is the primary focus of the private sector within the institutional framework of FSM?
- To promote open defecation practices
  - To increase water wastage
  - To provide sanitation services and technologies while adhering to regulations
  - To monopolize public resources for luxury projects
76. How does an institutional regulatory framework promote sustainable financing of FSM projects?
- By limiting access to funding sources
  - By excluding private sector investment
  - By creating mechanisms for attracting public and private investments
  - By focusing solely on traditional funding methods
77. What role does research and academia play in the institutional framework of FSM?
- Research and academia have no relevance to FSM planning.
  - Research and academia solely focus on entertainment events.
  - Research and academia provide evidence-based insights, innovation, and capacity-building for FSM practices.
  - Research and academia exclusively target foreign tourists.
78. What is the primary goal of Citywide Inclusive Sanitation (CWIS)?
- Exclusively focusing on improving water supply
  - Providing sanitation services only to affluent neighborhoods
  - Ensuring equitable access to improved sanitation for all urban residents
  - Prioritizing luxury tourism development in cities
79. How does Citywide Inclusive Sanitation differ from conventional sanitation approaches?
- CWIS focuses solely on technological advancements
  - CWIS prioritizes centralized treatment plants
  - CWIS emphasizes inclusivity and coverage for underserved populations
  - CWIS exclusively caters to tourist areas
80. What is the significance of community engagement in Citywide Inclusive Sanitation projects?
- Community engagement has no relevance to CWIS.
  - Community engagement is limited to exclusive luxury projects.
  - Community engagement ensures that local opinions and needs are considered in planning and implementation.
  - Community engagement only involves well-known celebrities.
81. What is the significance of a "pro-poor" approach in Citywide Inclusive Sanitation?
- Pro-poor approaches ignore the needs of marginalized communities.
  - Pro-poor approaches promote luxury sanitation services.
  - Pro-poor approaches prioritize interventions that benefit underserved and vulnerable populations.
  - Pro-poor approaches exclusively target wealthy individuals.
82. How does Citywide Inclusive Sanitation promote resilience in urban areas?
- By excluding vulnerable communities from planning
  - By ignoring disaster preparedness
  - By ensuring equitable access to sanitation services, reducing vulnerabilities, and building community capacities
  - By only focusing on high-end infrastructure development
83. What is the core principle of Citywide Inclusive Sanitation (CWIS)?
- Targeting only high-income neighborhoods
  - Prioritizing luxury spa facilities
  - Ensuring equitable access to sanitation for all urban residents, leaving no one behind
  - Focusing solely on aesthetic urban development
84. How does CWIS address the needs of differently abled individuals?
- By excluding them from sanitation planning
  - By creating separate sanitation facilities for them
  - By integrating their needs into the design of inclusive sanitation solutions
  - By prioritizing luxury facilities that exclude them
85. How does CWIS contribute to social integration in urban areas?
- By reinforcing social divisions and inequalities
  - By promoting exclusive facilities for specific social groups

- c) By ensuring that sanitation services are accessible to all, regardless of social background
  - d) By targeting only wealthy individuals for services
86. What is the role of public awareness campaigns in CWIS?
- a) To confuse the public about sanitation practices
  - b) To exclusively target tourists
  - c) To educate residents about the importance of inclusive sanitation practices and services
  - d) To focus on luxury lifestyle advertisements
87. How does CWIS promote gender equality in urban sanitation?
- a) By ignoring the gender aspect in sanitation planning
  - b) By providing separate sanitation facilities for different genders
  - c) By incorporating gender considerations into the planning and design of sanitation solutions
  - d) By targeting only one gender for exclusive services
88. What role does data and information play in CWIS planning?
- a) Data and information are irrelevant in CWIS planning.
  - b) Data and information are exclusively used for luxury advertising.
  - c) Data and information help in understanding the sanitation needs of diverse urban populations.
  - d) Data and information solely target foreign tourists.
89. What is the role of local leadership and governance in CWIS implementation?
- a) Local leadership has no role in CWIS implementation.
  - b) Local leadership solely focuses on luxury tourism development.
  - c) Local leadership plays a crucial role in driving CWIS projects, ensuring inclusivity, and coordinating efforts with different stakeholders.
  - d) Local leadership only targets foreign investors.
90. What role do sanitation workers and service providers play in CWIS?
- a) Sanitation workers have no relevance in CWIS.
  - b) Sanitation workers solely focus on luxury services.
  - c) Sanitation workers and service providers are critical for ensuring safe, efficient, and inclusive sanitation services for all residents.
  - d) Sanitation workers are exclusively focused on foreign tourists.
91. What is the role of financing mechanisms in CWIS projects?
- a) Financing mechanisms have no role in CWIS projects.
  - b) Financing mechanisms solely focus on luxury investments.
  - c) Financing mechanisms support the mobilization of resources for inclusive sanitation projects, ensuring sustainability and affordability.
  - d) Financing mechanisms target only wealthy individuals.
92. How does CWIS contribute to building urban resilience?
- a) By excluding vulnerable communities from resilience-building efforts
  - b) By ignoring disaster preparedness
  - c) By ensuring access to safe, hygienic, and inclusive sanitation services, reducing vulnerabilities, and building community capacities
  - d) By solely focusing on high-end infrastructure development
93. What is the purpose of containment in Faecal Sludge Management (FSM)?
- a) To encourage open defecation practices
  - b) To limit the access to sanitation facilities
  - c) To safely collect and store human excreta and wastewater before proper treatment or disposal
  - d) To promote water wastage in urban areas
94. What is the significance of proper containment practices in preventing groundwater contamination?
- a) Proper containment practices have no effect on groundwater contamination.
  - b) Proper containment practices solely focus on luxury water sources.
  - c) Proper containment practices prevent untreated faecal sludge from leaching into groundwater, safeguarding water quality and public health.
  - d) Proper containment practices only target high-income communities.
95. What is the role of maintenance in ensuring effective containment for FSM facilities?
- a) Maintenance is irrelevant for containment facilities.
  - b) Maintenance solely focuses on luxury aesthetics.
  - c) Regular maintenance ensures that containment facilities continue to function optimally, preventing overflow and pollution.

- d) Maintenance exclusively targets high-income areas.
96. What role does community engagement play in promoting effective containment practices?
- a) Community engagement has no role in containment practices.
  - b) Community engagement solely focuses on luxury entertainment.
  - c) Community engagement ensures that containment practices are culturally appropriate, understood, and accepted by local communities.
  - d) Community engagement only targets wealthy individuals.
97. What is the role of government regulations in promoting effective containment for FSM?
- a) Government regulations have no impact on containment practices.
  - b) Government regulations solely focus on luxury legislation.
  - c) Government regulations set standards and guidelines for the construction, use, and maintenance of containment facilities, ensuring public health and environmental protection.
  - d) Government regulations exclusively target high-income neighborhoods.
98. How can treated faecal sludge be beneficially reused?
- a) By distributing it to local communities as a luxury commodity
  - b) By promoting it as an ingredient in gourmet cuisine
  - c) By using it as a soil conditioner or fertilizer for agricultural purposes
  - d) By targeting only affluent neighborhoods for its use
99. How does the reuse of faecal sludge products contribute to the circular economy concept?
- a) By promoting linear waste disposal practices
  - b) By focusing exclusively on luxury circular economy products
  - c) By reintroducing waste materials back into the production cycle, reducing waste generation and promoting resource efficiency
  - d) By targeting only high-end circular economy initiatives
100. How does the reuse of faecal sludge products contribute to reducing pressure on landfill sites?
- a) By promoting the exclusive use of landfill sites for faecal sludge products
  - b) By creating luxury landfill sites for exclusive products
  - c) By diverting faecal sludge products from landfills, reducing waste accumulation and associated environmental issues
  - d) By targeting only high-end landfill sites