

SULIT



First Semester Examination
2021/2022 Academic Session

February/March 2022

EAA483 – Construction Management

Duration : 1 hour

Please ensure that this examination paper contains **SEVENTEEN (17)** printed pages before you begin the examination.

Instructions: This paper contains **PART A** (40 OMR Questions with 40 marks in total) and **PART B** (2 Essay Questions where each question carries 5 marks).

Answer **ALL** questions in **PART A** and **Part B**.

Both questions in **PART B** must be answered on a new page.

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PART A (40 marks)

1. What is the basic description of health & safety in construction?
 - A. Preventing people from being harmed by work
 - B. Encourage practitioners to overrule rules and regulations
 - C. Cost saving preferences in choosing the correct method
 - D. Part of the obligations addressed in construction contract
 - E. Avoiding workers on site from being affected by construction activities

2. Common accidents at construction sites are as follows except:
 - A. Fires
 - B. Chemical spills
 - C. Crane collapse
 - D. Falls from heights
 - E. Force majeure

3. The Construction Industries Development Board (CIDB) has identified some major causes of accidents at construction sites which could result in death or serious injuries to workers. How many major causes are there in the listing?
 - A. One
 - B. Three
 - C. Five
 - D. Six
 - E. Seven

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4. Which of the following statement is not true about the causing factors for accidents at construction sites?
- A. Reckless operations by workers due to insufficient supervision
 - B. Safe methods
 - C. Disobedience of rules & regulation
 - D. Employer's poor safety awareness
 - E. Knowledge ignorance
5. Personal Protective Equipment (PPE) obliges the provision of the following gear at every construction site except:
- A. Safety helmets
 - B. Safety harnesses
 - C. Gloves
 - D. Hearing protection
 - E. Eye protection
6. Which of the following statement is true about regulation on the Personal Protective Equipment (PPE)?
- A. Properly assessed before use
 - B. Maintained and stored properly
 - C. Provide with instructions
 - D. Used correctly by employees
 - E. Non-compliance

7. Which of the following Occupational Safety and Health (OSHA) Act has been enforced by the Department of Safety and Health (DOSH) as compulsory for all construction sites in Malaysia?
- A. Act 421
 - B. Act 435
 - C. Act 451
 - D. Act 415
 - E. Act 455
8. Which of the following regulation is placed under OSHA 1994?
- A. Safety and Health Committee Regulations, 1996
 - B. Safety and Health Officer Regulations, 1998
 - C. Control of Construction Major Accident Hazards Regulations, 1996
 - D. Employers' Safety and Health General Policy Statements (Exception) Regulations, 1994
 - E. Quality Health and Safety Regulations, 1997
9. What is fall hazard?
- A. Properly covered or protected floor holes and openings
 - B. A worker could be caught inside of or in between different objects
 - C. Anything at your worksite that could cause you to lose your balance
 - D. You are at risk when working at a height of five feet or more
 - E. Private property concern

10. Usually how struck by hazard occurs at a work site?
- A. Cave-in for unprotected workers
 - B. Trapped in between materials and an immovable structure
 - C. Working around heavy machinery and equipment
 - D. Working below elevated work surfaces
 - E. Suspended load materials moved below you
11. How the Total Quality Management (TQM) works?
- A. Refinement of current approach from feedback
 - B. Focusing on adopt and adapt approaches from benchmarking
 - C. Ignoring the recommendations made by stakeholders
 - D. Accepting the suggestions from shareholders
 - E. A combination of quality assurance and quality control
12. How many key sequential activities involved in the TQM?
- A. One
 - B. Two
 - C. Three
 - D. Four
 - E. Five
13. What is the key principle of Quality Assurance (QA)?
- A. Customer always right
 - B. Profit-oriented based product
 - C. Right at first time
 - D. Produce according to design
 - E. Client's specification-based services

14. What is the main aim of Quality Assurance (QA)?
- A. Process used to create services
 - B. Process used to create deliverables
 - C. Machineries used to create products
 - D. Standards used to monitor and control output
 - E. Standards use to ensure quality deliveries
15. How many key parameters are usually being used in the Continuous Quality Improvement (CQI)?
- A. Two
 - B. Four
 - C. Six
 - D. Eight
 - E. Ten
16. What is the key function of regulatory compliance in CQI?
- A. Make sure all OSHA acts are being addressed comprehensively
 - B. All Standard Operating Procedure (SOP) of CIDB is adhered
 - C. All legislations and guidelines related to the services offered are identified
 - D. All legislations and guidelines related to the services offered are implemented
 - E. All legislations are meant to be broken

17. What does it mean by a Lean CQI?
- A. Process of reducing non-value added activities
 - B. Framework that deals with supply chain management
 - C. Provides long term procedures for improvement purposes
 - D. Reduces waste to improve product delivery
 - E. A cumulative responsive action between employer and employee
18. What does a Quality Control (QC) mean in the real industrial practice?
- A. Entertains customer's or client's complaints
 - B. Minimizes construction cost
 - C. Enhances the sustainability of product
 - D. Ensures an on-time project delivery
 - E. Warrants product delivery to meet the desired specification
19. How many types of Quality Control (QC) are commonly being implemented in the real practice?
- A. One
 - B. Two
 - C. Three
 - D. Four
 - E. Five
20. When does an irregular control of QC is being applied in the daily industrial practice?
- A. At each different stage of construction project
 - B. Whenever statistical analysis and sampling theory are carried out
 - C. At every stage in the production cycle
 - D. When a customer complains about a product
 - E. Whenever the client feels it is necessary

21. Projects can be defined as

- (i). Fixed period of time which has a start and end date
- (ii). Involvement of various departments and disciplines
- (iii). Routine
- (iv). Limited by time, cost, resources, and performance specifications

- A. (i), (ii), (iii) only
- B. (i), (ii) (iv) only
- C. (i), (ii) only
- D. (i), (iii), (iv) only
- E. All the above

22. A lifecycle of a project usually involves the following sequential phases:

- A. Defining, Planning, Executing Stages
- B. Defining, Planning, Delivering Stages
- C. Defining, Planning, Executing, Delivering Stages
- D. Planning, Executing, Delivering Stages
- E. Planning, Delivering Stages

Refer **Figure 1** to answer **Questions 23 -24**

| RIBA Plan of Work | | | | | | | | | | | |
|-------------------|-------------|--------------|---------------|------------------|------------------------|---------------------|---------------|------------------|---|-------------------|----------|
| BRIEFING | | SKETCH PLANS | | WORKING DRAWINGS | | | | CONSTRUCTION | | POST CONSTRUCTION | |
| A | B | C | D | E | F | G | H | J | K | L | M |
| Inception | Feasibility | | Scheme Design | Detail Design | Production Information | Bills of Quantities | Tender Action | Project Planning | | Completion | Feedback |

Figure 1

23. For RIBA Plan of Works, Activity C is
- A. Organisation
 - B. Detailed Design
 - C. Project Planning
 - D. Feasibility
 - E. Outline Proposals
24. For RIBA Plan of Works, Activity K is
- A. Organisation
 - B. Detailed Design
 - C. Operations at Site
 - D. Feasibility
 - E. Conception
25. Nominated Sub Contractors (NSC) are different from Domestic Sub Contractors because they are
- A. Appointed by the Main Contractor
 - B. Nominated by the Client as a Sub Contractor for the Main Contractor
 - C. Appointed by tender by contractor
 - D. Nominated by the Client as a Sub Contractor answerable to the Client only
 - E. Nominated by the Main Contractor for the Client to Appoint as a Sub Contractor under the Main Contractor

26. Which of the following types of contract are classified as a package deal?
- (i). Contract With Contractor's Design
 - (ii). Design And Build (D and B)
 - (iii). Turnkey
 - (iv). Engineering, Procurement and Construction (EPC)
 - (v). Management Contract
- A. (i), (ii), (iii) only
B. (i), (ii), (iii), (iv) only
C. (i), (ii), (iv), (v) only
D. (i), (iii), (iv), (v) only
E. All the above
27. For an organisation, the skills required for a Middle Management Manager in order of priority are:
- A. Technical, Human Relationships, Conceptual order of skills
 - B. Human Relationships, Conceptual order of skills
 - C. Human Relationships, Technical, Conceptual order of skills
 - D. Technical, Human Relationships, Conceptual skills
 - E. Conceptual Skills, Human Relationships, Technical order of skills

28. For a Network Analysis, the critical path can be described as
- (i). where the activities on the path have no float
 - (ii). where the activities on the path have float
 - (iii). longest time for the project
 - (iv). shortest time for the project
 - (v). where the activities on the path cannot be delayed
- A. (i) only
B. (i) and (ii)
C. (i) and (iii)
D. (i), (ii) and (iv)
E. (i), (iii) and (v)
- 29 For an Activity on Node Analysis (AON), the difference between early finish and late finish is not equal to zero is best described as
- A. float
 - B. non-critical
 - C. critical
 - D. independent float
 - E. duration

30. Critical Path (CPM) is

- A. a synthesis of concepts
- B. built on activities
- C. built on time estimates
- D. built on activities and time estimates
- E. built on a combination of concepts, activities and time estimates

Refer **Figure 2** for Questions 31 – 36.

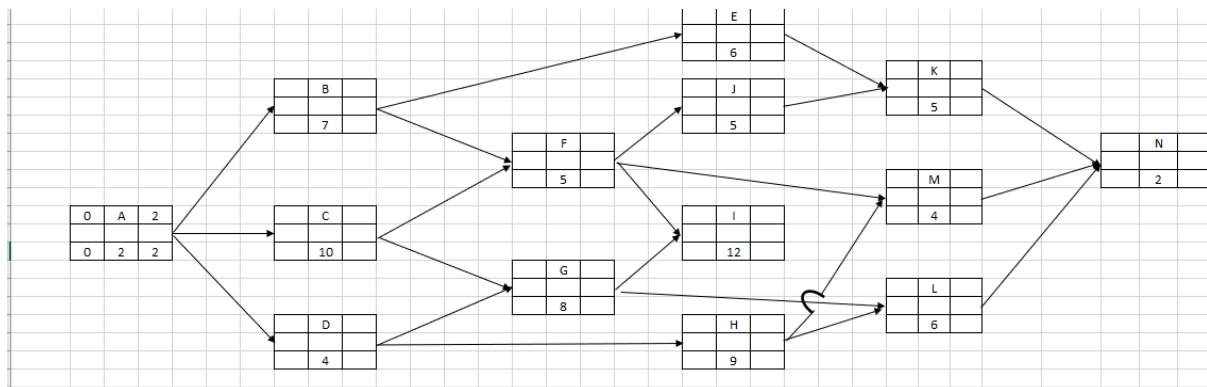


Figure 2

31. ES, EF, LS and LF for Activity F are

- A. ES = 22, EF =27, LS = 27, LF = 32
- B. ES = 17, EF =22, LS = 22, LF = 27
- C. ES = 12, EF =17, LS = 15, LF = 20
- D. ES = 15, EF =21, LS = 27, LF = 12
- E. ES = 20, EF =32, LS = 20, LF = 32

32. ES, EF, LS and LF for Activity K are

- A. ES = 22, EF =27, LS = 27, LF = 32
- B. ES = 17, EF =22, LS = 22, LF = 27
- C. ES = 12, EF =17, LS = 15, LF = 20
- D. ES = 15, EF =21, LS = 27, LF = 12
- E. ES = 20, EF =32, LS = 20, LF = 32

33. ES, EF, LS and LF for Activity I are

- A. ES = 22, EF =27, LS = 27, LF = 32
- B. ES = 17, EF =22, LS = 22, LF = 27
- C. ES = 12, EF =17, LS = 15, LF = 20
- D. ES = 15, EF =21, LS = 27, LF = 12
- E. ES = 20, EF =32, LS = 20, LF = 32

34. The float for activity E is

- A. 11
- B. 5
- C. 6
- D. 12
- E. 0

35. The float for activity H is

- A. 11
- B. 5
- C. 6
- D. 12
- E. 0

36. Which of the following is the critical path:
- A. A-C-G-I-N
 - B. A-C-F-I-N
 - C. A-C-F-J-K-N
 - D. A-C-G-L-N
 - E. A-D-H-L-N
37. Crashing is a compression technique that
- A. reduces the duration as much as possible with no increase of cost
 - B. increases the duration as much as possible
 - C. reduces the duration as much as possible with possibility of an increase in cost
 - D. reduces the cost by reducing the duration
 - E. increases the duration
38. Choose the correct order of Contract Management stages:
- A. Planning, Implementation, Pre Contract, Contract, Post Contract
 - B. Planning, Pre Contract, Contract, Pre-renewal Contract, Post Contract
 - C. Planning, Implementation, Pre Contract, Handover, Contract, Pre-renewal Contract, Post Contract
 - D. Planning, Implementation, Contract, Post Contract
 - E. Implementation, Pre Contract, Handover, Contract, Pre-renewal Contract, Post Contract

39. For Cost Plus Contract Variations, which of the following statements are correct:

- (i). Cost plus Fixed Percentage Contract – Compensation is based on a percentage of the cost;
- (ii). Cost plus Fixed Fee Contract – Compensation is based on a fixed sum independent the final project cost. The owner agrees to reimburse the contractor's actual costs, regardless of amount, and in addition pay a negotiated fee independent of the amount of the actual costs;
- (iii). Cost plus Fixed Fee with Guaranteed Maximum Price Contract – Compensation is based on a fixed sum of money. The total project cost can exceed an agreed upper limit;
- (iv). Cost plus Fixed Fee with Bonus Contract – Compensation is based on a fixed sum of money. A bonus is given if the project is finished below budget, ahead of schedule, etc.;
- (v). Cost plus Fixed Fee with Guaranteed Maximum Price with Bonus Contract – Compensation is based on a fixed sum of money. The total project cost can exceed an agreed upper limit and a bonus is given if the project is finished below budget, ahead of schedule, etc.; and
- (vi). Cost plus Fixed Fee with Arrangement for Sharing Any Cost Savings Contract – Compensation is based on a fixed sum of money. Any cost savings are shared with the buyer and the contractor.

- A. (i), (ii), (iii), (iv) only
- B. (i), (ii), (iii), (v) only
- C. (i), (ii), (v), (vi) only
- D. (i), (ii), (iv), (vi) only
- E. All

40. The Extension of Time (EOT) clause in the contract document provides
- (i). an avenue for the completion date of a construction project to be adjusted, and if necessary extend the scheduled completion date, normally due to delays, whilst offering protections to the client.
 - (ii). a mechanism for the completion date of a construction project to be adjusted
 - (iii). the allowance for the construction period to be extended due to unforeseen circumstances where the delay is generally the contractor's fault
 - (iv). a mean to assist the contractor to avoid paying LAD due to unforeseen delays.
- A. (i), (ii), (iii) only
 - B. (i), (ii), (iv) only
 - C. (i), (ii) only
 - D. (ii), (iii), (iv) only
 - E. All

PART B (10 marks)

1. (a). You are the project manager of a housing project in which a total of 10 houses are to be built over 10 months. The total budget for the housing project is RM 1,000,000.00. The project is now at the end of the 6th month with 5 houses built and RM 500,000.00 spent. The project is behind schedule. Calculate Cost Performance Index (CPI) for the project. Comment on the status of the project based on the CPI calculated.

[5 marks]

- (b). You are the project manager of road paving project where a total of 10 km of road is to be paved over a five months period. The total budget for the project is RM100,000.00. The project is now at the end of the 3rd month with 8 km of road paved and RM80,000.00 spent. Calculate Schedule Performance Index (SPI) for the project. Comment on the status of the project based on SPI calculated.

[5 marks]

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