1. The disadvantages of precast concrete is:
    a. Less formwork required
    b. safety and on-time construction execution
    c. Limited building design flexibility
    d. Lower maintenance cost

Answer

- *it requires careful supervision and more skilled workers for producing the members.*
- *It becomes difficult to produce satisfactory connections between the precast members.*
- *It is necessary to arrange for special equipment for lifting and moving of the precast units.*
- *Some members are broken up and wasted during the time of transportation from the factory to the construction site.*
- *If not properly handled, the precast units may be damaged during transport.*
- *Uniform spacing between beams is required in the structure, which can become difficult.*
- *It requires a high initial investment for installing a precast concrete plant.*

*Based on these disadvantages, the correct answer to your question is **c. Limited building design flexibility**. This is because precast concrete has less flexibility in terms of shape, size, and spacing of the structural members than cast-in-place concrete.*

2. Which of the following types of walls is constructed to divide the space within the building?

A. Cavity wall

B. Retaining wall

C. Partition wall

D. Curtain wall

A partition wall is an interior non-load bearing wall that separates the larger space into smaller spaces[2]. It can be made of glass, fiber boards or brick masonry.

*Therefore, the correct answer to your question is C. **Partition wall.***

3. In paints, the pigment is responsible for.

A. Durability
B. Glassy face
C. Color
D. Smoothness

The pigment is a colored substance that is insoluble in water and gives the paint its color and opacity. The pigment also helps the binder to stick and improves the resistance of the paint film to weathering.

*Therefore, the correct answer to your question is **C. Color**.*

4. Why it is important to do bibliography?

A. To show that you are ra espectfully borrowing other people's ideas
B. To offer additional information to your readers who may wish to further pursue your topic
C. To acknowledge and give credit to sources of words, ideas, diagrams, and illustrations

D. All are the answer

According to the search results, a bibliography is important for several reasons, such as:

- *To show that you are respectfully borrowing other people's ideas[123] and giving credit to the sources of words, ideas, diagrams, and illustrations[14].*
- *To offer additional information to your readers who may wish to further pursue your topic[124] and make it easy for them to find the sources you used[2].*
- *To acknowledge and give credit to sources of words, ideas, diagrams, and illustrations[14] and avoid plagiarism[25].*
- *To document the course of information from its original source through later academic works and help researchers understand how that information has been cited and interpreted over time[4].*

*Therefore, the correct answer to your question is **D. All are the answer**.*

5. Which one could be considered a flex room among the following room?

A. Office
B. Kitchen
C. Living room
D. Bedroom

A flex room can be used for multiple purposes, such as a home office, a craft room, a game room, or a guest room[13]. A flex room can be located anywhere in the home, such as a hallway, an alcove, or a closet[12].

*Therefore, the correct answer to your question is **A. Office**, as it is the most likely to be considered a flex room among the options given*

6.**Hooke's Law is valid or applied:**

A. Necking region

B. Elastic region

C. In strain hardening region

D. Everywhere in the stress strain curve

According to the search results, Hooke's Law is a law of elasticity that states that the force needed to extend or compress a spring by some distance is proportional to that distance[123]. Hooke's Law is valid or applied only for relatively small deformations of an object, where the displacement or size of the deformation is directly proportional to the deforming force or load[143]. Hooke's Law describes the elastic properties of materials only in the range in which the force and displacement are proportional[4].

*Therefore, the correct answer to your question is **B. Elastic region**, as it is the only region in the stress-strain curve where Hooke's Law is applicable.*

7. The below figure can express:

A. Vertical line
B. Inclined line
C. Implied line
D. Horizontal line

8. The process of giving form, shapes and character to the groups of buildings to the whole neighborhoods and the city is known:

A. Graphic design
B. Interior design
C. Product design
D. Urban design

*The process of giving form, shapes and character to the groups of buildings to the whole neighborhoods and the city is known as **urban design**. According to Wikipedia, urban design is "an approach to the design of buildings and the spaces between them that focuses on specific design processes and outcomes. In addition to designing and shaping the physical features of towns, cities, and regional spaces, urban design considers 'bigger picture' issues of economic, social and environmental value and social design."[1]*
Urban design is an interdisciplinary field that utilizes the procedures and the elements of architecture and other related professions, including landscape design, urban planning, civil engineering, and municipal engineering[1] Urban design operates at many scales, from the macro scale of the urban structure (planning, zoning, transport and infrastructure networks) to the micro scale of street furniture and lighting[2]
Urban design can influence the economic, environmental, social and cultural outcomes of a place, such as its economic success, socio-economic composition, health, natural ecosystems, built environments, and identity[2] Urban design is both a process and an outcome of creating localities in which people live, engage with each other, and engage with the physical place around them[2]

Therefore, the correct answer to your question is D. Urban design

9. The main factors affecting shell roofs are:

A. Comparatively less material is required than other forms of roof structure

B. The resistance of the structure is independents on its form

C. The entire roof is a structural element

D. Basic strength is inherent in its geometrical shape and form

A shell roof is a thin curved membrane or slab that can function both as a roof covering and structure. It is typically composed of concrete panels curved cylindrically or spherically to achieve greater strength. Shell roofs are shaped to transmit applied forces by compressive, tensile, and shear stresses that act in the plane of the surface[12]

The main factors affecting shell roofs are:

- *Comparatively less material is required than other forms of roof structure. Shell roofs are very thin and lightweight, which reduces the material consumption and cost[3]*
- *The resistance of the structure is dependent on its form. Shell roofs rely on their curved shape to resist external loads, rather than on their thickness or reinforcement. The form of the shell roof determines its stiffness and load-bearing capacity[24]*
- *The entire roof is a structural element. Shell roofs do not require additional supports or beams, as they are self-supporting structures that span large areas without intermediate columns or walls[24]*
- *Basic strength is inherent in its geometrical shape and form. Shell roofs have a high strength-to-weight ratio, as they use the geometry of curves and arches to distribute the stresses evenly throughout the structure*

This is the same question you asked before. The correct answer is A, C, and D. The resistance of the structure is dependent on its form, not independent. Please refer to my previous explanation for more details

10. Which one of the following cannot be the Properties of a centralized organization?

A. Its stable
B. Usually bigger in size than the other spaces around it
C. The spaces can either be directly related to one another or be linked through a separate & distinct linear space
D. It has a central dominant space

A centralized organization is a hierarchical decision-making structure where all processes and decisions are made at the executive or top level. Managers and employees in the organization's lower chain of command can rarely make or implement decisions without the executive's approval[12]

Some of the properties of a centralized organization are:

- *It is stable. A centralized organization benefits from a clear chain of command, a focused vision, and reduced costs. It can execute decisions quickly and in a unified manner, and avoid conflicts and confusion among employees[34]*
- *It has a central dominant space. A centralized organization adheres to standard procedures and methods that guide the organization, which are usually housed at the company's head office or headquarters. The head office is the main decision-making center, where the executives and specialists are based[35]*
- *The spaces can either be directly related to one another or be linked through a separate & distinct linear space. A centralized organization follows a clear plan of delegating authority to employees who excel in specific functions. The employees can communicate directly with each other or through the head office, depending on the nature of their tasks and responsibilities[34]*

The property that cannot be the property of a centralized organization is:

- *Usually bigger in size than the other spaces around it. This property does not necessarily apply to a centralized organization, as it depends on the size and scope of the organization's operations and activities. A centralized organization can be small or large, depending on its industry, market, and goals. The size of the organization does not affect its decision-making structure or processes[35]*

Therefore, the correct answer to your question is B. Usually bigger in size than the other spaces around it

11. Which one is not included in conceptual or schematic design phase from the following?

A. The formulation of preliminary broad-based concepts
B. Gathering Personal Information like (Age, number, gender, size, activities and relationships of everyone in the house)
C. Decisions on character, function and aesthetics
D. Preliminary Floor plans/ space plan

The conceptual or schematic design phase is the first phase of the architectural design process. It is the stage where the design team begins to describe the architectural and tectonic elements of the project design. They take the programming and concept design, and translate it into architectural and spatial designs[12]

Some of the steps or tasks included in the conceptual or schematic design phase are:

- ***The formulation of preliminary broad-based concepts**. The design team explores various ideas and alternatives to achieve the best possible design solutions. They use tools like schematic diagrams and sketching to quickly convey spatial ideas to the client[23]*
- ***Decisions on character, function and aesthetics**. The design team considers the building program, site analysis, budget, schedule, codes, regulations, and client preferences to make decisions on the character, function and aesthetics of the project. They also coordinate preliminary design input from sub-consultants and consider structural and building services systems to be used in the project[12]*

- ***Preliminary floor plans/space plan**. The design team prepares preliminary floor plans or space plans that show the layout, dimensions, circulation, and relationships of spaces within the project. They also prepare preliminary furniture and equipment layouts and undertake preliminary selection of materials and finishes[12]*

The task that is not included in the conceptual or schematic design phase from the following is:

- ***Gathering personal information like (age, number, gender, size, activities and relationships of everyone in the house)**. This task is more likely to be part of the programming strategy phase, which is the first phase of the architectural project process. It is the stage where architects and clients meet to discuss the requirements of the building, such as its purpose, function, size, budget, schedule, users, etc. Gathering personal information is important for understanding the needs and preferences of the client and users, but it is not part of the schematic design phase[23]*

Therefore, the correct answer to your question is B. Gathering personal information like (age, number, gender, size, activities and relationships of everyone in the house).

12. What is stress strain curve?

A. It is the difference between stress and strain

B. It is the percentage of stress and strain

C. It is the relationship between stress and strain

D. No answer

A stress-strain curve is a graphical representation of the relationship between stress and strain in a material. Stress is the force applied to a material per unit area, while strain is the resulting deformation of the material[12]
A stress-strain curve is obtained by gradually applying load to a test coupon and measuring the deformation, from which the stress and strain can be determined. The curve reveals many of the properties of a material, such as the Young's modulus, the yield strength and the ultimate tensile strength[23]
The shape and sections of the curve depend on the type and characteristics of the material. For example, ductile materials show a large plastic deformation before fracture, while brittle materials show little or no plastic deformation. The curve also shows different stages, such as the proportional limit, the elastic limit, the yield point, the ultimate stress point, and the fracture or breaking point[24]

Therefore, the correct answer to your question is C. It is the relationship between stress and strain.

13.What cannot be included in Architectural Design Process of pre design phase/stage?

A. Preparing a sense of rough plans, which shows the general arrangement of rooms and the building on the site.

B. Developing a program and obtaining site survey/ investigation.

C. Gathering the information necessary to begin design, and avoid trouble along the way.

D. Investigating zoning regulations and analyze site possibilities and limitations

*According to the sources I found, the **pre-design phase** of the architectural design process is the stage where the project's constraints, opportunities, requirements and budget are analyzed[12]. It involves gathering information, researching, and understanding the client's needs and the site's conditions[34].*

*Therefore, among the options you provided, **preparing a series of rough plans**, which shows the general arrangement of rooms and the building on the site, **cannot be included** in the pre-design phase. This is*

*because it is part of the **schematic design phase**, where the design concepts are explored and presented to the client[3]. The other options are all relevant to the pre-design phase*

14. A Cage or box filled with rocks, concrete or soil for use in road building and landscaping:

A. Gabion wall

B. Kerb

C. Folley

D. Retaining wall

According to the sources I found, a cage or box filled with rocks, concrete or soil for use in road building and landscaping is called a** gabion[1234]**. The word gabion comes from Italian gabbione meaning "big cage"[1234]. Gabions are used for erosion control, slope stabilization, retaining walls, noise barriers, and other civil engineering and military applications[12].
Therefore, among the options you provided,** A. Gabion wall **is the correct answer. A gabion wall is a retaining wall made of stacked stone-filled gabions tied together with wire[1]. The other options are not related to cages or boxes filled with rocks, concrete or soil

15. What is the purpose of furniture requirement in buildings?

A. To create space flexibility and building setup

B. To facilitate accommodation of changes in the future

C. To determine the required size of room without overcrowding

D. To add the aesthetics with feelings of beauty and luxury in the appearance of the building

*According to the sources I found, the purpose of furniture requirement in buildings is to determine the **functional** and **aesthetic** needs of the occupants and users of the spaces[123]. Furniture is an essential element of space planning, as it affects the size, shape, layout, and comfort of the rooms[12]. Furniture also contributes to the appearance, style, and mood of the spaces[2].*

*Therefore, among the options you provided, **C. To determine the required size of room without overcrowding** and **D. To add the aesthetics with feelings of beauty and luxury in the appearance of the building** are both valid purposes of furniture requirement in buildings. However, if only one answer is allowed, then option C might be more appropriate, as it relates to the functional aspect of furniture, whereas option D relates to the subjective preference of the occupants or users. Option A and B are not directly related to furniture requirement, but rather to space flexibility and adaptability.*

16. _____is the plan view of beams showing the layout or arrangement size spacing & marks for identification

A. Roof top layout

C. Foundation

B. Structural beam layout

D. Column layout

*answer is **B. Structural beam layout**. This is the plan view of beams showing the layout or arrangement size spacing & marks for identification[12]. The beams are indicated as dashed lines as they are beneath the slab or above the cut plane of the floor plan view[2]*

17.The characteristics of Christian Architecture is:

A. Simplicity in design & Treatment

B. Focus put into interiors rather than exteriors

C. Its Capital is bell-shaped and crowned with animals

D. Overcome human weakness including greed and anger

This is one of the characteristics of Early Christian Architecture, which developed from the Roman basilica and adapted itself to existing pagan architecture[12]. Early Christian churches were simple in design and focused on the interior space rather than the exterior[34]. The capital was not bell-shaped but rather derived from the Corinthian or Composite order[2]. The Christian message was not about overcoming human weakness but about salvation through faith in Jesus Christ answer is ***A. Simplicity in design & Treatment*****.**

18. Which one is the most efficient stadium truss design?

A.

B.

C.

D.

19. The Chaithya hall of Buddhist Architecture was used for:

A. Dining

B. Recreation

C. Prayer

D. Sleeping

This is the main purpose of the chaitya hall of Buddhist Architecture, which refers to a shrine, sanctuary, temple or prayer hall that houses a stupa[12]. The stupa is the focus of devotion and circumambulation for the Buddhist worshippers[13]. The chaitya hall was often carved out of rock and had a high vaulted roof, with elaborate decoration on the pillars and the entrancE

Based on my web search, the answer is ***C. Prayer***

20.Which one of the following is not possibility there for grouping of two or more forms from an additive tYPE transformation?

A. Face - to - face contact

B. Stretching and compression transformation

C. Spatial tension

D. Interlocking relationship

Based on my web search, the answer is D. Interlocking relationship. This is not a possibility for grouping of two or more forms from an additive type transformation in architecture. Additive type transformation refers to an approach that develops architectural projects on the basis of growth patterns in nature, using a limited number of repeating elements[1]. Additive forms can be created by adding elements to a primary solid, or by assembling elements together[2]. The possible ways of grouping additive forms are:

- *Face-to-face contact: This occurs when two or more forms share a common face or surface[2].*
- *Edge-to-edge contact: This occurs when two or more forms share a common edge or line[2].*

- *Point-to-point contact: This occurs when two or more forms share a common point or vertex[2].*
- *Spatial tension: This occurs when two or more forms are placed close together but do not touch, creating a sense of visual connection and balance[2].*
- *Stretching and compression transformation: This occurs when a form is elongated or shortened along one or more of its dimensions, creating variations in size and proportion[3].*

Interlocking relationship, on the other hand, is a type of transformation that involves the overlap or penetration of volumes so that they interlock with one another[3]. This is not an additive type transformation, but rather a subtractive or hybrid type transformation.

.

21._____is the green part of the city that weaves in the form of urban parks, street, trees, plants, flower

A. Pedestrian network

B. Buildings

C. Public space

D. Landscape

This is the green part of the city that weaves in the form of urban parks, street trees, plants, flowers, and water in many forms[1]. The landscape helps define the character and beauty of a city and creates soft, contrasting spaces and elements[1]. The landscape also mitigates the effects of pollution and heat in urban areas, and provides benefits for human health and well-being ***D. Landscape****.*

22. _____the study of spatial distances between individuals in different cultures and situations.

A. Proxemics

B. Anthropometry

C. Phenomenology

D. Ergonomics

the study of spatial distances between individuals in different cultures and situations is called ***proxemics****[12]. Proxemics is one of the subcategories of nonverbal communication, along with haptics, kinesics, vocalics, and chronemics[2]. Proxemics examines how people use personal space and how it affects their behavior, communication, and social interaction[12].*

Therefore, the correct answer to your question is ***A. Proxemics****.*

Anthropometry is **not** the study of spatial distances between individuals, but rather the study of the **measurements and proportions of the human body**[12]. Anthropometry is used for various purposes, such as physical anthropology, ergonomics, clothing design, and forensics[2]. Anthropometry involves measuring the size, structure, and composition of humans[2]

Phenomenology is **not** the study of spatial distances between individuals, but rather the study of the **development of human consciousness and self-awareness** as a preface to or a part of philosophy[12]. Phenomenology also refers to a philosophical movement that describes the **formal structure of the objects of awareness and of awareness itself** in abstraction from any claims concerning existence[23]. Phenomenology focuses on the direct investigation and description of phenomena as consciously experience

Ergonomics is **not** the study of spatial distances between individuals, but rather the study of the **design of furniture or equipment and the way this affects people's ability to work effectively**[12]. Ergonomics is also an applied science concerned with **designing and arranging things people use so that the people and things interact most efficiently and safely**[34]. Ergonomics aims to reduce the physical stress and resulting injuries associated with working, such as overuse injuries, poor posture and more serious muskuloskeletal disorders[5].

23. Who wrote the Book titled, "The Seven Lamps of Architecture"?

a. No answer

b. Emmanuel Viollet-le-Duc

c. William Morris

d. John Ruskin

ChatGPT

The correct answer is:

d. John Ruskin

"The Seven Lamps of Architecture" is a book written by John Ruskin. It was published in 1849 and is a significant work in the field of architectural criticism and theory. In the book, Ruskin discusses the fundamental principles of architecture and criticizes the prevailing architectural trends of his time. He emphasizes the importance of moral and social responsibility in architecture, as well as the need for beauty, truth, and craftsmanship in the built environment.

Therefore, the correct answer is d. John Ruskin.

24. Neoclassicism and the enlightenment is

a. The design that use the laws of reason

b. Simplicity and naturalness is the basic rules of architecture

c. Proper function and form are the final and scientific aims

d. All are the answer

ChatGPT

The correct answer is:

d. All are the answer

Neoclassicism and the Enlightenment in architecture encompass all of the given options.

a. The design that uses the laws of reason: Neoclassical architecture, influenced by the Enlightenment, emphasized the use of reason and rationality in design. Architects looked to ancient Greek and Roman architecture as a model of harmonious proportions and logical principles.

b. Simplicity and naturalness as the basic rules of architecture: Neoclassical architecture favored simplicity and naturalness in its design principles. It sought to create clean, ordered forms and draw inspiration from nature.

c. Proper function and form as the final and scientific aims: Neoclassical architects focused on the proper function and form of buildings. They sought to create designs that were functional, efficient, and adhered to a set of scientific principles.

Therefore, all of the given options a, b, and c are correct. The neoclassical architectural style of the Enlightenment period was characterized by its adherence to reason, simplicity, naturalness, proper function, and form.

25. Maximum bending moment for a cantilevered beam subjected to uniformly distributed load over the entire span of the beam occurs at:

a. 1/3rd span

b. Fixed end

c. Free end

d. Mid Span

the bending moment of a cantilever beam is the sum of moments about the section of all the loads acting between the section and the free end[12]. The bending moment of a cantilever beam varies from zero at the free end to a maximum value at the fixed end support[132]. The bending moment of a cantilever beam is maximum at the fixed end and decreases to zero at the free end[132].

Therefore, the correct answer to your question is **B. Fixed end**, as it is the location where the maximum bending moment occurs for a cantilevered beam subjected to uniformly distributed load over the entire span of the beam

26. Which one of the following is not the Architectural Features of Yeha Temple (Temple of the Moon)?

a. The temple is constructed by the use of mortar

b. Long well-cut blocks with excellent straightness and tightness of joints

c. Courses are equal and about one foot high

d. Is masonry dressed stone

ChatGPT

The option that is not an architectural feature of the Yeha Temple (Temple of the Moon) is:

a. The temple is constructed by the use of mortar.

The Yeha Temple is an ancient Ethiopian temple known for its impressive architecture. However, the Yeha Temple is not constructed using mortar. Instead, it is an example of megalithic construction, where large stones are precisely cut and fitted together without the use of mortar.

The other options are architectural features of the Yeha Temple:

b. Long well-cut blocks with excellent straightness and tightness of joints: The temple is constructed using large stone blocks that are carefully cut to fit together with straight edges and tight joints.

c. Courses are equal and about one foot high: The stones in the temple are arranged in horizontal layers or courses, each being approximately one foot in height.

d. Is masonry dressed stone: The stones used in the construction of the Yeha Temple are dressed, meaning they are shaped and finished to achieve a smooth and polished appearance.

*Therefore, the **correct answer is a**. The temple is constructed by the use of mortar.*

27. Which one is correct about types of building finishes?

a. The whitewash is process of washing the surface of white wall with water to make the surface white enough

b. Color wash is prepared by adding the necessary coloring pigments in suitable quantifies

c. Plastering is the process of covering various surfaces of structure with cement mortar, lime mortar or composite mortar

d. Pointing is the process of finishing of mortar joints in exposed brick or stone masonry

types of building finishes include plastering, pointing, painting, varnishing, white washing, colour washing, distempering, etc[123]. These finishes perform two main functions: they give a protective coating to the surfaces and they provide decorative effects[123]. Some of the definitions of these finishes are:

- *Plastering: covering various surfaces with a plastic material such as cement mortar, lime mortar or composite mortar, etc to obtain an even, smooth, regular, clean and durable surface[123].*
- *Pointing: filling the joints of brickwork or stonework with mortar to improve appearance and weather resistance[12].*

- *Painting: applying a pigmented liquid to a surface to protect and decorate it[12].*
- *Varnishing: applying a transparent liquid to a surface to give it a glossy and protective coating[12].*
- *White washing: applying a thin layer of lime and water to a surface to make it white and sanitary[12].*
- *Colour washing: applying a thin layer of coloured liquid to a surface to give it a tint[12].*
- *Distempering: painting plastered surfaces with distemper, a cheaper and simpler alternative to paint and varnish[12].*

Therefore, the correct answer to your question is A. The whitewash is process of washing the surface of white wall with water to make the surface white enough, as it is not correct about types of building finishes. White washing is not washing the surface with water, but applying a mixture of lime and water[12].

ChatGPT

The correct statement about types of building finishes is:

d. Pointing is the process of finishing mortar joints in exposed brick or stone masonry.

Pointing is the process of filling and finishing the mortar joints between individual bricks or stones in exposed masonry. It is done to improve the aesthetics, durability, and weather resistance of the masonry structure. Pointing can be done using different materials such as cement mortar, lime mortar, or specialized pointing compounds.

Option a, regarding whitewash, is not an accurate description. Whitewashing typically involves applying a mixture of lime and water to the surface to create a white coating.

Option b, regarding color wash, is partially correct. Color wash is indeed prepared by adding coloring pigments to create a colored finish, but the statement does not mention the application method or the specific purpose of color wash.

Option c, regarding plastering, is also partially correct. Plastering does involve covering various surfaces with mortar, but it can be done using different types of mortar such as cement mortar, lime mortar, or gypsum plaster, not just cement or composite mortar.

Therefore, the most accurate statement is d. Pointing is the process of finishing mortar joints in exposed brick or stone masonry.

28. Which of the following term is used to indicate the art of the building, the structure in stone?

a. Bond

b. Masonry

c. Mortar

d. Brick

ChatGPT

The term used to indicate the art of building with stone is:

b. Masonry
Masonry is used to indicate the art of building a structure in either stones or bricks[2]. The masonry wall is built of individual blocks of materials such as stones, bricks, concrete, hollow blocks, cellular concrete and laterite, usually in horizontal courses cemented together with some form of mortar[2].

The other options are incorrect because:

- A bond is a pattern in which bricks or stones are laid to ensure the stability and strength of a wall[2].
- A mortar is a mixture of cement, sand and water that is used to bind the bricks or stones together in a wall[2].
- A brick is a rectangular block of clay that is baked in a kiln or dried in the sun and used as a building material[2].

Option a, "Bond," refers to the arrangement and pattern in which individual masonry units are laid and interconnected to ensure structural stability and integrity.

Option c, "Mortar," is the material used to bind the masonry units together. It is a mixture of cement, sand, and water that hardens and provides strength to the masonry structure.

Option d, "Brick," refers to a specific type of masonry unit made from clay or other materials, typically rectangular in shape and used for building walls, pavements, and other structures.

Therefore, the correct answer is b. Masonry.

29 The written and graphic documents prepared for communicating the design of the project and administering the contract for its construction is known as

a. Bid document

b. Construction documents

c. Tender Document

d. BoQ (Bill of Quantity)

ChatGPT

The written and graphic documents prepared for communicating the design of the project and administering the contract for its construction are known as:

b. Construction documents

Construction documents, also referred to as construction drawings or working drawings, are a comprehensive set of documents that provide detailed information about the design, specifications, and construction requirements of a project. They include architectural drawings, structural drawings, mechanical and electrical drawings, specifications, schedules, and any other relevant information necessary for construction.

Option a, "Bid document," typically refers to the documents provided to contractors during the bidding process to solicit their proposals or bids for the project.

Option c, "Tender document," is similar to a bid document and includes information on the project, requirements, terms, and conditions for potential contractors to submit their bids or tenders.

Option d, "BoQ (Bill of Quantity)," is a document that provides a detailed breakdown of the quantities and costs of materials, labor, and other items required for the construction project.

While bid documents, tender documents, and BoQs may be part of the overall construction documents package, they do not encompass the entire set of drawings and documents that comprise the construction documents.

Therefore, the most appropriate answer is b. Construction documents.

30. The flooring made with small pieces of broken tiles of china glazed or of marble arranged in different pattern, is known as:

a. Mosaic flooring

b. Asphalt flooring

c. Terrazo flooring

d. Granolithic flooring

ChatGPT

The flooring made with small pieces of broken tiles of china glazed or of marble arranged in different patterns is known as:

a. Mosaic flooring

Mosaic flooring refers to the technique of creating a decorative floor surface by arranging small pieces of tiles, usually made of materials like china, ceramic, glass, or marble, in intricate patterns or designs. The tiles are typically of different colors and shapes, and they are placed closely together to form a mosaic-like pattern on the floor.

Option b, "Asphalt flooring," refers to a type of flooring material made from asphalt or bitumen, which is commonly used in areas like driveways, roads, and parking lots.

Option c, "Terrazzo flooring," involves embedding small chips of marble, granite, glass, or other aggregates into a cementitious or resinous base to create a durable and decorative floor surface.

Option d, "Granolithic flooring," is a type of flooring that consists of a mixture of cement, sand, and crushed granite or other hard aggregates, which is then poured and leveled to create a smooth and durable surface.

Therefore, the correct answer is a. Mosaic flooring.

31 One is a universal principle of architectural design.

a. Route

b. Geometry

c. Form

d. All are the answer

ChatGPT

The universal principle of architectural design is:

d. All are the answer

Each option listed - route, geometry, and form - is a significant aspect of architectural design and contributes to the overall principles and considerations in creating a well-designed building or structure. Let's briefly discuss each option:

a. Route: Refers to the circulation or movement paths within a building or site. It involves the careful planning of pathways, corridors, staircases, and entrances to ensure efficient and intuitive movement for occupants or visitors.

b. Geometry: Refers to the use of mathematical principles and shapes in architectural design. Geometry influences the proportions, relationships, and spatial arrangements of elements within a building. It helps create harmony, balance, and aesthetic appeal.

c. Form: Refers to the overall shape, composition, and arrangement of elements in a building. Form considers the massing, volume, and proportions of architectural elements and their relationship to the surrounding context. It plays a crucial role in defining the visual identity and character of a structure.

Considering the importance and relevance of all these principles in architectural design, the correct answer is d. All are the answer.

32. The first page of research report is

a. Index

b. Appendix

c. Tittle page

d. Bibliography

According to the information I found, the correct answer is c. Title page[1].
The title page is the first page of a research report that contains the title of the report, the name of the author(s), the name of the institution or organization, and other relevant information[1]. The title page gives the reader an overview of what the report is about and who wrote it[1].

The other options are incorrect because:

- *An index is a list of terms or topics that are discussed in a document, along with the pages where they are mentioned[2]. An index is usually placed at the end of a document, not at the beginning[2].*
- *An appendix is a section that contains supplementary information that is not essential to understand the main findings of a research report, such as tables, figures, charts, or questionnaires[3]. An appendix is also usually placed at the end of a document, after the reference list[3].*

- *A bibliography is a list of sources that are cited or consulted in a research report. A bibliography is also placed at the end of a document, either as part of the reference list or as a separate section.*

33. Which one is incorrect according to Architectural Design Philosophy the use of line as a design element?

A. Inclined line defines dynamism, movement, about to fall or Rise

B. Horizontal line defines rest, calmness resolution with gravity

C. Implied line defines axis, centerline

D. Vertical line defines down, inferiority, admission of defeat to gravity

According to the information I found, the correct answer is ***d. Vertical line defines down, inferiority, admission of defeat to gravity***[1].
This statement is incorrect because vertical lines in architectural design do not imply inferiority or defeat, but rather stability, strength, and height[1]*. Vertical lines can also create a sense of direction, movement, and rhythm*[2].

The other options are correct because:

- *Inclined lines define dynamism, movement, about to fall or rise. Inclined lines can create a sense of tension, instability, or imbalance in a design*[12].
- *Horizontal lines define rest, calmness, resolution with gravity. Horizontal lines can create a sense of calmness, relaxation, or stability in a design*[12].
- *Implied lines define axis, centerline. Implied lines are not physically drawn, but suggested by the arrangement of other elements in a design. They can create a sense of direction, orientation, or organization*[3].

34. The main purpose of research in education is to

A Help in the personal growth of an individual

B. Increase job prospects of an individual

C. Increase social status of an individual

D Help the candidate become an eminent educationist

This statement is incorrect because it is not the main purpose of research in education. The main purpose of research in education is to expand the existing body of knowledge by providing solutions to different problems in pedagogy while improving teaching and learning practices[12]*. Educational researchers also seek answers to questions bothering on learner motivation, development, and classroom management*[1].

The other options are correct because:

- *Research in education can help in the personal growth of an individual by enhancing their critical thinking, problem-solving, and communication skills*[3].
- *Research in education can increase job prospects of an individual by providing them with relevant qualifications, competencies, and credentials*[3].
- *Research in education can increase social status of an individual by contributing to the advancement of society, culture, and economy*

35.

a. Solar shading

b. Radiant cooling

c. Insulation

d. Evaporative cooling

36. Mostly the brick flooring is used in

A. Workshops C. No answer

B. Verandahs D. Godowns

According to the information I found, the correct answer is d. Godowns[1].
Godowns are large buildings or warehouses used for storing goods or merchandise[2]. Brick flooring is suitable for godowns because it is durable, strong, fire-resistant, and easy to maintain[13]. Brick flooring can also withstand heavy loads and resist moisture and pests[13].

The other options are incorrect because:

- *Workshops are places where manual work is done, such as carpentry, metalwork, or pottery[4]. Brick flooring is not ideal for workshops because it is hard, rough, and uneven, which can cause discomfort, fatigue, or injury to the workers[5].*
- *Verandahs are roofed platforms along the outside of a house, level with the ground floor. Brick flooring is not ideal for verandahs because it can fade, crack, or stain due to exposure to weather and sunlight[5].*
- *No answer is not a valid option.*

37. Which one is not sources of research topic and problems

A. Daily problems we are facing

B. Searching new area for supervisor

C. Unexplored areas of around our living

D. Theory of one's own interest

*According to the information I found, the correct answer is **b. Searching new area for supervisor**[1].*
This statement is incorrect because it is not a source of research topic and problems. A source of research topic and problems is something that inspires, motivates, or challenges a researcher to investigate a specific issue or gap in existing knowledge[12]. Searching new area for supervisor is not a source of research topic and problems, but rather a strategy or a method to find one.

The other options are correct because:

- *Daily problems we are facing are sources of research topic and problems because they reflect the practical needs and concerns of people in different contexts and situations[13].*
- *Unexplored areas of around our living are sources of research topic and problems because they indicate the potential for discovering new phenomena or expanding knowledge on existing ones[12].*
- *Theory of one's own interest is a source of research topic and problems because it shows the personal curiosity and passion of a researcher for a certain field or discipline*

38. Among the following which statement is False statement about •Ambient lighting-

A. Enables users to see the critical details of an activity

B. No answer

C. Provides uniform lighting and its design should be based upon the purpose of the space in respect of the need of its users

D. Enables the perception of the overall shape and size of a space

*According to the information I found, the correct answer is **a. Enables users to see the critical details of an activity**[1].*
This statement is incorrect because it is not a characteristic of ambient lighting, but rather of task lighting. Task lighting is a type of lighting that provides focused illumination for specific activities, such as reading, writing, cooking, or sewing[2]. Task lighting enables users to see the critical details of an activity and avoid eye strain or fatigue[2].

The other options are correct because:

- *Ambient lighting provides uniform lighting and its design should be based upon the purpose of the space in respect of the need of its users[13]. Ambient lighting is the primary source of lighting in a room that creates the mood and the desired ambiance[3].*
- *Ambient lighting enables the perception of the overall shape and size of a space[1] . Ambient lighting is the glow surrounding all spaces that helps the eye focus on specific areas and features.*
- *No answer is not a valid option.*

39._____includes different types of shops market areas and handicraft industries

A. Cultural areas

B. Residential areas

C. Recreational areas

D. Commercial areas

*I found, the correct answer is **d. Commercial areas**[1].*
Commercial areas are places where different types of shops, market areas, and handicraft industries are located[1]. Commercial areas are designed to facilitate the exchange of goods and services, and to generate income and employment opportunities[12].

The other options are incorrect because:

- *Cultural areas are places where cultural activities, such as arts, music, literature, and religion, are practiced and preserved[3].*
- *Residential areas are places where people live in houses, apartments, or other dwellings.*
- *Recreational areas are places where people engage in leisure activities, such as sports, games, entertainment, or relaxation.*

40. Among the following, which one is not properties of a grid organization

A. It may express a direction

B. Its consisted of modular units of space

C. Its stable

D. It consists of repetitive spaces

*According to the information I found, the correct answer is **a. It may express a direction**[1].*
This statement is incorrect because it is not a property of a grid organization, but rather of a linear organization. A linear organization is a system that aligns page elements based on sequenced lines or curves[2]. A linear organization may express a direction, such as horizontal, vertical, diagonal, or curved[2].

The other options are correct because:

- *A grid organization consists of modular units of space[1]. A grid organization is a system that aligns page elements based on sequenced columns and rows[3]. A grid organization consists of modular units of space that can be arranged and subdivided in various ways[3].*
- *A grid organization is stable[1]. A grid organization is composed of linear reference points that are usually perpendicular to each other, creating a sense of stability and order[4].*
- *A grid organization consists of repetitive spaces[1]. `*

41. Which one is incorrect about ordering principle?

A. Symmetry is the balanced distribution and arrangement of equivalent forms and spaces on opposite sides of a dividing line

B. Transformation is a unifying movement characterized by a patterned repetition or alteration of formal elements or motifs in the same or a modified form

C. A datum must have sufficient size, closure, and regularity to be seen as a figure that can embrace or gather together the elements being organized within its field

D. Axis is a line defined between two points in space about which forms can be arranged in a symmetrical or balanced manner

*According to the information I found, the correct answer is **c. A datum must have sufficient size, closure, and regularity to be seen as a figure that can embrace or gather together the elements being organized within its field**[1].*
This statement is incorrect because it is not a definition of an ordering principle, but rather a description of a datum. A datum is a reference element that can be used to organize other forms and spaces in relation to it[2]. A datum can be a point, line, plane, or volume that has a distinct identity and character[2].

The other options are correct because:

- *Symmetry is an ordering principle that defines the balanced distribution and arrangement of equivalent forms and spaces on opposite sides of a dividing line or around a center[3].*
- *Transformation is an ordering principle that defines a unifying movement characterized by a patterned repetition or alteration of formal elements or motifs in the same or a modified form.*
- *Axis is an ordering principle that defines a line established by two points in space, about which forms and spaces can be arranged in a symmetrical or balanced manner.*

42. The figure below shows:

A. Ionic Order

B. Corinthian Order

C. Doric Order

D Tuscan Order

43. A series of numbers or elements showing an increase or decrease by a quantity that is always the same.

A. Arithmetic progression C. Geometric progression

B. Changing progression . D. Formal Progression

*According to the information I found, the correct answer is **a. Arithmetic progression**[1].*
An arithmetic progression is a series of numbers or elements showing an increase or decrease by a quantity that is always the same[1]. For example, the series 2, 4, 6, 8, 10 is an arithmetic progression with a common difference of 2.

The other options are incorrect because:

- *Changing progression is not a valid term for a series of numbers or elements.*
- *Geometric progression is a series of numbers or elements showing an increase or decrease by a constant ratio[2]. For example, the series 2, 4, 8, 16, 32 is a geometric progression with a common ratio of 2.*
- *Formal progression is not a valid term for a series of numbers or elements.*

44. Which one of the following is not an Architectural element of Gondarian buildings?

A. Crenellated walls and parapets

B. Rectangular or cylindrical towers often topped by egg-shaped cupolas

C. Quadrangular plans

D. Symmetrical

According to the information I found, the correct answer is d. Symmetrical[1].
This statement is incorrect because symmetry is not an architectural element of Gondarian buildings, but rather a characteristic of Georgian architecture. Georgian architecture is a style of architecture that originated in England in the 18th and early 19th centuries, and was influenced by classical Greek and Roman forms[2]. Symmetry is one of the main features of Georgian architecture, as it reflects the balance and harmony of the classical orders[2].

The other options are correct because:

- *Crenellated walls and parapets are architectural elements of Gondarian buildings that were used for defensive purposes and to create a fortress-like appearance[13].*
- *Rectangular or cylindrical towers often topped by egg-shaped cupolas are architectural elements of Gondarian buildings that were influenced by Indian and Portuguese styles, and were used to provide views and ventilation[13].*
- *Quadrangular plans are architectural elements of Gondarian buildings that were based on a rectangular layout with a central courtyard, and were used to organize the spaces and functions of the buildings*

45. The heat transfer in a wave form from a warmer body surface to a cooler body.

A. Humidity

B. Radiation

C. Conduction

D. Convection

According to the information I found, the correct answer is **b. Radiation**[1].
Radiation is the heat transfer in a wave form from a warmer body surface to a cooler body[1]. Radiation does not require any medium to travel through, and it involves the emission and absorption of electromagnetic waves, such as infrared, visible light, or microwaves[2]. For example, the Sun transfers heat to the Earth by radiation.

The other options are incorrect because:

- Humidity is not a mode of heat transfer, but rather a measure of the amount of water vapor in the air[3].
- Conduction is the heat transfer through stationary matter by physical contact[1]. Conduction involves the transfer of kinetic energy from faster-moving molecules to slower-moving ones[4]. For example, a metal spoon transfers heat to your hand by conduction.
- Convection is the heat transfer by the macroscopic movement of a fluid[1]. Convection involves the transfer of thermal energy by the circulation or mixing of fluid particles with different temperatures[5]. For example, hot air rises and cold air sinks in a room by convection.

46. Why research is systematic?

A. Follows a thesis work and design project

B. The adopted investigation must follow a certain logical sequence

C. Varied direction is necessary important

D. Data collection is in a randomness

*According to the information I found, the correct answer is **b. The adopted investigation must follow a certain logical sequence**[1].*
This statement is correct because it explains why research is systematic. Research is systematic because it follows a procedure that is organized, logical, and rigorous, based on evidence and not beliefs[12]. Research is systematic because it aims to reduce bias, increase reliability, and ensure validity of the findings[3].

The other options are incorrect because:

- *Follows a thesis work and design project is not a reason why research is systematic, but rather a possible outcome or application of research. A thesis work and design project are examples of academic or professional activities that require research to support their claims or objectives[4].*
- *Varied direction is necessary important is not a reason why research is systematic, but rather a potential challenge or limitation of research. Varied direction means that research can be influenced by different factors, such as personal interests, funding sources, ethical issues, or social contexts[5]. Varied direction can make research more complex or difficult to conduct or interpret[5].*
- *Data collection is in a randomness is not a reason why research is systematic, but rather a violation of the principle of research. Data collection should not be random, but rather planned, structured, and consistent[6]. Data collection should follow a clear protocol that specifies the sources, methods, tools, and criteria for collecting data[6]*

47._____ must act as a •road map' for the proposed research study

A. Research objectives

B. Research outputs

C. Research limitation

D. Background of the study

According to the information I found, the correct answer is a. Research objectives[1].
Research objectives are statements that describe what the research aims to achieve or answer[1]. Research objectives must act as a road map for the proposed research study, because they guide the direction, scope, and focus of the research[2]. Research objectives also help to organize the literature review, data collection, analysis, and presentation of the findings[3].

The other options are incorrect because:

- *Research outputs are the results or outcomes of the research, such as publications, reports, presentations, or patents. Research outputs are not a road map for the proposed research study, but rather a measure of the impact or contribution of the research.*
- *Research limitations are the constraints or weaknesses of the research, such as lack of resources, time, data, or generalizability. Research limitations are not a road map for the proposed research study, but rather a reflection of the challenges or difficulties of the research.*
- *Background of the study is the section that provides the context and rationale for the research, such as the problem statement, research gap, significance, and scope of the study. Background of the study is not a road map for the proposed research study, but rather an introduction to the research.*

48. Comprehensive architectural and engineering services includes

A. Preparation service

B. Implementation service

C. Technical assistance services

D. All are the answer

*, the correct answer is **d. All are the answer**[1].*

Comprehensive architectural and engineering services include all of the following:

- *Preparation service: This service involves the development of conceptual designs, feasibility studies, preliminary drawings, cost estimates, and other documents that define the scope, budget, and schedule of a project[2].*
- *Implementation service: This service involves the preparation of design development and construction documents, such as plans, specifications, contracts, permits, and bids, that detail the technical and contractual aspects of a project[2]. Implementation service also involves the supervision and administration of the construction process, such as site inspections, quality control, change orders, and payments[2].*
- *Technical assistance service: This service involves the provision of specialized expertise or advice on various aspects of a project, such as environmental impact assessment, energy efficiency, sustainability, safety, accessibility, or maintenance*

49. Which one is not category of Principles of Design?

A. Movement, Harmony, Unity and Rhythm

B. Value, Color, Space and Texture

C. Balance, Symmetry and Emphasis

D. Proportion, Variety and Emphasis

According to the information I found, the correct answer is b. Value, Color, Space and Texture[1].
This statement is incorrect because it is not a category of principles of design, but rather a category of elements of design. Elements of design are the basic components or building blocks that make up a visual composition, such as line, shape, form, value, color, space, and texture[2]. Elements of design can be manipulated or arranged according to the principles of design to create an effective and attractive design[3].

The other options are correct because:

- *Movement, Harmony, Unity and Rhythm are principles of design that relate to how the elements of design create a sense of motion, balance, wholeness, and flow in a composition[4].*
- *Balance, Symmetry and Emphasis are principles of design that relate to how the elements of design create a sense of stability, equality, and focus in a composition[5].*
- *Proportion, Variety and Emphasis are principles of design that relate to how the elements of design create a sense of scale, diversity, and interest in a composition.*

50. The significance of urban design is:

A. To build comfortable living place for the dwellers

B. To threat historical heritage

C. To develop environmental and social issues

D. To increase resource utilization in the urban areas

51. _____is the written instructions distinguishing or limiting and describing in detail any construction work to be undertaken.

A. Construction drawing

B. Legend

C. Bill of Quantities

D. Specification

A specification is a written document that describes in detail the scope of work, materials, methods, and quality of workmanship for a construction project. It is usually prepared by architects, engineers, designers, and specifiers, and may be published as part of the contractual documentation for contractors to be read in parallel with models and drawings[1]. A specification is an essential document that helps ensure the correct execution of the design plan and reduces the risk of disputes, errors, and failures[2].

*Therefore, based on this definition, the most appropriate answer to your question would be **D. Specification**. A construction drawing is a graphical representation of the design and dimensions of a project. A legend is a list of symbols and abbreviations used in a drawing. A bill of quantities is a document that itemizes the materials, labor, and other costs involved in a project.*

52. Which one is wrong about bathroom design?

A. Design direct the light to the person, not to the mirror

B. Locating the lamp behind the persons viewing the mirror

C. If a single luminaire is used above the mirror, use one that is at least 2 feet long to avoid casting shadows under the chin

D. Use light from both sides of the mirror to reduce shadows on the face

Bathroom lighting design is an important aspect of creating a functional and comfortable space. According to experts, the best bathroom lighting should provide adequate illumination for various tasks, such as grooming, shaving, or applying makeup, as well as create a relaxing and inviting atmosphere[123]. To achieve this, there are some general principles and tips to follow when choosing and placing lighting fixtures in the bathroom.
One of the most common tips is to avoid lighting the mirror directly, as this can create glare and harsh shadows on the face. Instead, it is recommended to use side lighting or cross lighting from sconces or wall-mounted fixtures on either side of the mirror, which can provide even and flattering light for the face[123]. If a single fixture is used above the mirror, it should be long enough to avoid casting shadows under the chin or eyes[1]. Another tip is to pay attention to the color temperature of the light bulbs, which can affect how the skin tone and colors appear. Warm white light (2700K) is preferred by some designers, as it mimics natural daylight and creates a cozy ambiance[2]. However, some people may prefer cooler white light (3000K or higher) for a brighter and cleaner look. The choice of color temperature depends on personal preference and the overall style of the bathroom.

*Therefore, based on these tips, the answer that is wrong about bathroom lighting design is **B. Locating the lamp behind the persons viewing the mirror**. This would create a backlit effect that would make the face appear dark and unclear in the mirror. This is not ideal for bathroom lighting design, as it would make it difficult to perform tasks that require good visibility and accuracy*

53. Who is the most known theorist of Postmodemism?

A. Marcus Vitruvius Pollio

B. Le Corbusier

C. Louis Sullivan

D. Robert Venturi

Postmodernism is a term that refers to a broad movement that emerged in the late 20th century as a critique and departure from the principles and practices of modernism, especially in the fields of art, literature, philosophy, and architecture. Postmodernism is characterized by a rejection of universal truths, grand narratives, and absolute

standards, and an embrace of diversity, plurality, ambiguity, irony, and playfulness. Postmodernism also challenges the notions of originality, authenticity, and authorship, and often employs pastiche, parody, intertextuality, and hybridity as stylistic devices[1].
In architecture, postmodernism emerged in the late 1950s as a reaction against the austerity, formality, and lack of variety of modern architecture, particularly in the international style advocated by Le Corbusier and Mies van der Rohe. Postmodern architecture defends an architecture full of signs and symbols that can communicate cultural values and historical references. Postmodern architecture also seeks to create buildings that are sensitive to the context within which they are built, and that reflect the diversity and complexity of human experience[2].
One of the most influential and well-known theorists of postmodernism in architecture is Robert Venturi, an American architect and writer who is widely regarded as the father of postmodern architecture. Venturi introduced the movement in his book Complexity and Contradiction in Architecture (1966), where he argued for an architecture that is complex and contradictory rather than simple and pure, that acknowledges the richness and ambiguity of modern experience, that incorporates elements from different styles and periods, that celebrates ornament and decoration, and that respects the existing context and character of places[23]. Venturi also coined the famous slogan “Less is a bore” as a counterpoint to Mies van der Rohe’s “Less is more”, expressing his preference for an architecture that is interesting and engaging rather than minimal and boring[4].
Venturi collaborated with his wife and partner Denise Scott Brown, another prominent figure in postmodern architecture, in many projects and publications that exemplified their postmodern approach. Their most famous work is probably the Vanna Venturi House (1962-1964) in Philadelphia, which is considered one of the first examples of postmodern architecture. The house features a complex composition of geometric forms, a playful use of scale and proportion, a mixture of historical references from classical to vernacular architecture, a contrast between symmetry and asymmetry, and a deliberate use of contradiction and ambiguity[5].
Other notable postmodern architects include Philip Johnson, Michael Graves, Charles Moore, Aldo Rossi, James Stirling, Ricardo Bofill, Hans Hollein, Arata Isozaki, Frank Gehry, Rem Koolhaas, Zaha Hadid, among others. Some of their iconic postmodern buildings are the AT&T Building (now Sony Building) by Johnson (1978-1984) in New York; the Portland Building by Graves (1980-1982) in Portland; the Piazza d’Italia by Moore (1978) in New Orleans; the Bonnefanten Museum by Rossi (1990-1995) in Maastricht; the Neue Staatsgalerie by Stirling (1977-1984) in Stuttgart; the Walden 7 by Bofill (1970-1975) in Barcelona; the Haas House by Hollein (1987-1990) in Vienna; the Tsukuba Center Building by Isozaki (1979-1983) in Tsukuba; the Guggenheim Museum Bilbao by Gehry (1991-1997) in Bilbao; the Seattle Central Library by Koolhaas (1999-2004) in Seattle; and the Vitra Fire Station by Hadid (1990-1993) in Weil am Rhein[2].
Therefore, based on this information, the most known theorist of postmodernism in architecture would be **D. Robert Venturi**. The other options are not associated with postmodernism: Marcus Vitruvius Pollio was an ancient Roman architect who wrote a treatise on architecture called De architectura; Le Corbusier was a pioneer of modern architecture who advocated for functionalism, rationalism, and standardization; Louis Sullivan was an American architect who is considered the father of skyscrapers and who coined the phrase "form follows function"[1]

54. The major classification types of rock church according to the manner of construction

A. built— up cave churches

B. Rock — Hewn cave churches

C. Rock — Hewn monolithic churches

D. All are the answer

Rock churches are churches that are either carved out of natural rock formations or built with rock blocks. Rock churches are found in various parts of the world, but they are especially prevalent and distinctive in Ethiopia, where they represent a unique expression of Ethiopian Orthodox Christianity. Rock churches in Ethiopia date back to the 6th century AD, and they are classified into three major types according to the manner of construction[12]:

- *Built-up cave churches: These are churches that are built inside natural or artificial caves, using rock blocks or bricks to form walls, arches, domes, and other architectural elements. The cave provides shelter and protection for the church, and sometimes also serves as a burial place for monks or pilgrims. Examples of built-up cave churches in Ethiopia include Yemrehana Krestos Church near Lalibela, Abba Libanos Church in Tigray, and Abuna Yemata Guh Church in Gheralta[12].*

- *Rock-hewn cave churches: These are churches that are carved out of the rock face, creating a hollow space inside the rock mass. The exterior of the church is usually plain and inconspicuous, while the interior is decorated with paintings, sculptures, and other features. The rock-hewn cave churches can be further divided into two subtypes: semi-monolithic and non-monolithic. Semi-monolithic churches are partially detached from the surrounding rock, while non-monolithic churches are fully attached to the rock[12]. Examples of rock-hewn cave churches in Ethiopia include Debre Damo Monastery in Tigray, Abreha we Atsbeha Church in Tigray, and Makina Medhane Alem Church in Lalibela[12].*
- *Rock-hewn monolithic churches: These are churches that are carved out of a single block of rock, creating a free-standing structure that is completely separated from the surrounding rock. The exterior of the church is usually elaborate and ornate, mimicking the forms and styles of conventional built-up churches. The interior of the church is also richly decorated and furnished. The rock-hewn monolithic churches are considered the most impressive and complex type of rock churches in Ethiopia, and they are concentrated in the town of Lalibela, where there are 11 such churches dating from the 12th and 13th centuries[12]. Examples of rock-hewn monolithic churches in Lalibela include Bete Giyorgis (Church of St. George), Bete Medhane Alem (Church of the Savior of the World), and Bete Amanuel (Church of Emmanuel)[12].*

Therefore, based on this information, the answer that includes all the major classification types of rock churches according to the manner of construction is ***D. All are the answer****.*

55. Architects professional service includes preparation of construction cost estimates but their estimate is not feasible due to factors. Which one is not factor affecting construction cost?

A. Construction schedule

B. Construction materials and methods

C. Simplicity of the project

D. Location of a project

Construction cost estimation is the process of predicting the total cost of a construction project based on various factors and assumptions. Construction cost estimation is an important task for contractors, clients, designers, and engineers, as it helps to plan, budget, and control the project. Construction cost estimation is also a complex and uncertain process, as it involves many variables and uncertainties that may change over time[12].
There are many factors that affect the cost of construction projects. The most significant factor is the scope of work, which defines the extent and quality of the work to be performed, the materials to be used, the methods to be employed, and the standards to be followed. The scope of work determines the quantity and type of resources required for the project, such as labor, materials, equipment, and subcontractors[12].
Other important factors that affect the cost of construction projects include[123]:

- *The type of project: Different types of projects have different levels of complexity, risk, and uncertainty. For example, residential projects are usually simpler and more predictable than industrial or commercial projects. The type of project also influences the design, engineering, permitting, and regulatory requirements of the project.*
- *The location of the project: The location of the project affects the cost of construction in several ways. For example, the location determines the availability and cost of labor, materials, equipment, and transportation. The location also affects the site conditions, such as soil quality, topography, climate, drainage, utilities, access roads, etc. The location also influences the local market conditions, such as supply and demand, competition, inflation, taxes, etc.*
- *The schedule of the project: The schedule of the project refers to the duration and sequence of activities to complete the project. The schedule affects the cost of construction by influencing the productivity, efficiency, and coordination of resources. A shorter schedule may increase the cost of construction by requiring more resources or overtime work. A longer schedule may increase the cost of construction by increasing the overhead costs or exposing the project to more risks and uncertainties.*
- *The size and complexity of the project: The size and complexity of the project refer to the magnitude and difficulty of the project. Larger and more complex projects usually require more resources and coordination*

than smaller and simpler projects. Larger and more complex projects also tend to have more uncertainties and challenges that may increase the cost of construction.

- *The availability of labor and materials: The availability of labor and materials refers to the supply and demand of skilled workers and quality materials for the project. The availability of labor and materials affects the cost of construction by influencing the price, quality, and delivery time of resources. A shortage or surplus of labor or materials may increase or decrease the cost of construction depending on market conditions.*

*Based on these factors, one factor that is not affecting construction cost is **C. Simplicity of the project**. Simplicity is not a factor by itself; it is a relative term that depends on other factors such as scope, type, size, complexity, etc. A simple project for one contractor may be a complex project for another contractor depending on their experience, expertise, resources, etc.*

56. From the Pre-historic Architecture; the enclosure formed by huge stones planted on the ground in circular form is known as

A. Menhir

B. Dolmen

C. Ziggurats

D. Cromlech

Prehistoric architecture is the term used to describe the structures and monuments built by ancient cultures before the advent of writing and recorded history. Prehistoric architecture reflects the environmental, social, religious, and technological aspects of different prehistoric societies, and often shows remarkable skills and creativity in using natural materials and adapting to various landscapes[1].

One of the most common and distinctive types of prehistoric architecture is the stone circle, which consists of upright stones arranged in a circular or elliptical pattern, sometimes aligned with astronomical phenomena or surrounded by earthworks. Stone circles are found in various parts of the world, but they are especially numerous and diverse in Britain and Ireland, where they date from the late Neolithic to the early Bronze Age (c. 3000-1500 BC). Stone circles are believed to have served various purposes, such as ritual, ceremonial, burial, calendrical, or social functions[2][3].

Another type of prehistoric architecture is the henge, which is a circular or oval-shaped enclosure defined by a bank and an internal ditch, with one or more entrances. Henges are also mainly found in Britain and Ireland, and they date from the late Neolithic to the early Bronze Age (c. 3000-1500 BC). Henges often contain or are associated with other features, such as stone circles, timber circles, pit circles, standing stones, or burial mounds. Henges are also thought to have been used for ritual, ceremonial, or social purposes .

A third type of prehistoric architecture is the dolmen, which is a megalithic structure consisting of one or more large flat stones supported by upright stones, forming a chamber or a table-like shape. Dolmens are found in various regions of the world, but they are particularly common in Europe, Asia, and Africa, where they date from the Neolithic to the early Bronze Age (c. 4000-1500 BC). Dolmens are usually interpreted as tombs or burial monuments, but they may also have had other functions .

A fourth type of prehistoric architecture is the menhir, which is a single upright stone that may be shaped or carved. Menhirs are also found in various regions of the world, but they are especially prevalent in Europe, where they date from the late Neolithic to the Iron Age (c. 3000-500 BC). Menhirs may have been used as markers, memorials, landmarks, or for ritual or astronomical purposes .

A fifth type of prehistoric architecture is the ziggurat, which is a stepped pyramidal structure with a temple or shrine on top. Ziggurats are characteristic of the ancient Mesopotamian civilizations of Sumer, Babylon, and Assyria, where they date from the 3rd to the 1st millennium BC. Ziggurats were built as religious centers dedicated to various gods and goddesses, and they symbolized the connection between heaven and earth .

*Therefore, based on this information, the answer that describes an enclosure formed by huge stones planted on the ground in circular form is ****D. Cromlech****. A cromlech is another term for a stone circle or a henge with a stone circle inside. The other options do not match this description: A menhir is a single stone; a dolmen is a chamber or a table; and a ziggurat is a stepped pyramid.*

57. The urban open space in Roman cities:

A. Forum

B. Agora

C. Square

D. Plaza

The urban open space in Roman cities was known as the forum, which was a multipurpose, centrally located area that was surrounded by public buildings and colonnades and that served as a public gathering place. The forum was an adaptation of the Greek agora, or

marketplace, and also contained religious, political, judicial, and commercial functions. The forum was the focal point of civic life in Roman cities, and often reflected the history, culture, and identity of the city and its inhabitants[12].

The forum was usually rectangular or trapezoidal in shape, and had one or more entrances that connected it to the main streets of the city. The forum was enclosed by a ditch or a wall, and had a paved or gravelled surface. The forum was lined with porticoes or colonnades that provided shade and shelter for pedestrians, merchants, and spectators. The forum also contained various monuments and structures, such as temples, basilicas, arches, statues, altars, rostra (speakers' platforms), curiae (senate houses), comitia (assembly places), tabernae (shops), macella (market halls), etc. The forum was often decorated with sculptures, paintings, inscriptions, and trophies that commemorated the achievements and events of the city and its patrons[12].

The most famous and oldest forum was the Forum Romanum in Rome, which was located between the Palatine and Capitoline hills. The Forum Romanum was the site of many important religious and political ceremonies, such as triumphal processions, elections, trials, speeches, games, festivals, etc. The Forum Romanum also contained some of the most impressive temples and monuments of ancient Rome, such as the Temple of Saturn, the Temple of Vesta, the Temple of Castor and Pollux, the Temple of Caesar, the Arch of Titus, the Arch of Septimius Severus, etc[12].

In addition to the Forum Romanum, there were many other forums in Rome and other Roman cities that served different purposes or were dedicated to different deities or emperors. For example, in Rome there were the Imperial Forums (such as the Forum of Caesar, the Forum of Augustus, the Forum of Trajan, etc.), which were built by successive emperors to expand the public space and display their power and glory; there were also specialized forums for different types of commerce or administration (such as the Forum Boarium for cattle trade, the Forum Holitorium for vegetable trade, the Forum Piscarium for fish trade, etc.)[12].

*Therefore, based on this information, the answer that describes the urban open space in Roman cities is **A. Forum**. The other options do not match this description: An agora was a Greek term for a similar type of open space; a square is a generic term for a public space that may not be specific to Roman cities; and a plaza is a Spanish term for a similar type of open space.*

58. One of the following is false statement about concept

A. Mainly focuses on the site information like soil type and existing features

B. It provides a methodology to the thinking process by offering a type of rule book.

C. It gives the architect / designer a clear direction and framework when making design decisions

D. Is an idea, philosophy, belief, inspiration, image, theory, and notion

A concept in architecture is an idea, intention, or inspiration that establishes the foundation of a design project. It helps to generate a response to a given design scenario, by addressing the project's brief, context, restrictions, issues, use, and structural requirements. A concept also provides a methodology for the thinking process by offering a type of rule book or framework that guides the design decisions and ensures coherence and consistency throughout the project[12].

A concept can be derived from various sources of inspiration and creativity, such as personal experiences, emotions, perceptions, research, analysis, culture, society, nature, etc. A concept can also take different forms of expression and communication, such as a written statement, a sketch, a diagram, a model, a collage, etc. A concept can be simple or complex, abstract or concrete, literal or metaphorical, depending on the designer's vision and goals[12].

A concept is not only important for the initial stages of a design project, but also for its development and completion. A concept helps to create a clear direction and purpose for the design project, and to communicate it effectively to the clients, users, and other stakeholders. A concept also helps to evaluate and refine the design project as it progresses, by testing its feasibility, functionality, aesthetics, and impact[12].

*Therefore, based on this information, the answer that is a false statement about concept is **A. Mainly focuses on the site information like soil type and existing features**. This is not true because a concept does not only focus on the site information, but also on other aspects of the design project such as the brief, the context, the issues, the use, etc. The site information is only one of the possible sources of inspiration or input for a concept. The other options are true statements about concept: B. It provides a methodology to the thinking process by offering a type of rule book; C. It gives the architect / designer a clear direction and framework when making design decisions; D. Is an idea, philosophy, belief, inspiration, image, theory, and notion.*

59. A block of stone or concrete provided under the end of tie beam to spread the load from the roof over a large area of bearing, is called:

A. Template

B. Hip

C. Verge

D. Gable

A tie beam is a horizontal structural member that connects two or more vertical members, such as columns or posts, to provide stability and prevent spreading or buckling. A tie beam is usually located at the top of the vertical members, and may support a roof or a floor above it. A tie beam can be made of steel, wood, or reinforced concrete, depending on the type and load of the structure[12].
A template is a block of stone or concrete that is provided under the end of a tie beam to spread the load from the roof over a large area of bearing. A template is also known as a padstone, a bearing block, or a corbel. A template helps to prevent crushing or splitting of the vertical member under the tie beam, and to distribute the load evenly to the foundation. A template is usually rectangular or square in shape, and its size and thickness depend on the size and weight of the tie beam and the strength of the vertical member[3] .

*Therefore, based on this information, the answer that describes a block of stone or concrete provided under the end of tie beam to spread the load from the roof over a large area of bearing is **A. Template**. The other options do not match this description: A hip is a sloping ridge formed by the intersection of two inclined roof surfaces; a verge is the edge of a roof that projects over a gable wall; and a gable is the triangular part of a wall between the edges of a sloping roof.*

60. The rejection of cities or destroying of cities are known as:

A. Depression

B. Civilization

C. Anti-urbanization

D. Massive urbanization

The rejection or destruction of cities is a phenomenon that occurs when cities are abandoned, attacked, or demolished by natural or human causes. The rejection or destruction of cities can have various social, economic, environmental, and cultural impacts on the urban population and the surrounding regions. The rejection or destruction of cities can be motivated by various factors, such as war, disaster, disease, migration, poverty, crime, pollution, etc[12].

One term that is used to describe the rejection or destruction of cities is anti-urbanism, which is a negative attitude or ideology towards urban life and urbanization. Anti-urbanism can manifest itself in various forms, such as rural nostalgia, urban decay, urban sprawl, urban warfare, urban terrorism, etc. Anti-urbanism can also be expressed in various media, such as literature, art, film, etc. Anti-urbanism can be seen as a reaction to the perceived problems and challenges of urbanization, such as overcrowding, congestion, pollution, inequality, alienation, etc[3] .

*Therefore, based on this information, the answer that describes the rejection or destruction of cities is ****C. Anti-urbanization****. The other options do not match this description: Depression is a mental disorder characterized by persistent low mood and loss of interest; civilization is a complex society with advanced culture and technology; and massive urbanization is the rapid growth and expansion of urban areas.*

61. Skillful arrangement of doors and windows in the external wall of a building which allows the occupants to enjoy the natural gift

A. Roominess

B. Grouping or assembling

C. Aspect

D. Prospect

The skillful arrangement of doors and windows in the external wall of a building that allows the occupants to enjoy the natural gift of light, air, and views is known as aspect. Aspect is an important factor in architectural design, as it affects the comfort, health, and well-being of the occupants, as well as the energy efficiency, aesthetics, and value of the building. Aspect also depends on the orientation, location, climate, and context of the building[12].

Aspect can be enhanced by various design strategies, such as choosing the appropriate size, shape, type, and position of doors and windows; using glazing materials that allow natural light and ventilation while preventing heat loss or gain; providing shading devices such as awnings, blinds, or shutters to control solar radiation and glare; creating openings that frame or capture desirable views or scenery; and avoiding openings that face noisy or unpleasant surroundings[12].

*Therefore, based on this information, the answer that describes the skillful arrangement of doors and windows in the external wall of a building that allows the occupants to enjoy the natural gift is ***C. Aspect***. The other options do not match this description: Roominess is the quality of being spacious or having ample space; grouping or assembling is the act of arranging or putting together similar or related elements; and prospect is the possibility or expectation of something happening in the future.*

62. The figure below can show:

a. Form as a Point

b. Form as a plane

c. Form as a volume

d. Form as a line

63. What will be the size of the window area when the room height of the building is about 3m and the floor volume of the living room is 45m3? (Remember, window size should be 1/4 of the floor area)

A. 0.75 m2

B. 3.75 m2

C. 11.25 m2

D. 3 m2

To find the size of the window area, we need to first find the floor area of the living room. We can use the formula:

floor area = floor volume / room height

Substituting the given values, we get:

floor area = 45 m3 / 3 m

floor area = 15 m2

Since the window size should be 1/4 of the floor area, we can use the formula:

window size = floor area / 4

Substituting the value of floor area, we get:

window size = 15 m2 / 4

window size = 3.75 m2

*Therefore, the answer is **B. 3.75 m2**.*

64. Which one is the best way to divert vertical load path in earthquake area?

A. Tuned mass dampeners (TMD)

B. Tuned liquid dampeners (TLD)

C. Base isolation

D. Providing bracing in walls

The best way to divert vertical load path in earthquake area is to use base isolation. Base isolation is a technique that decouples the building from the ground motion, reducing the seismic forces transmitted to the structure. Base isolation consists of installing flexible

bearings or isolators between the building and its foundation, which allow relative movement and deformation between them. Base isolation can reduce the damage and deformation of the building, as well as the acceleration and displacement of the occupants and contents[1][2].

The other options are not effective ways to divert vertical load path in earthquake area. Tuned mass dampers (TMD) and tuned liquid dampers (TLD) are devices that reduce the vibration and sway of tall or flexible structures by adding a counteracting mass or liquid that moves out of phase with the structure. TMD and TLD are useful for mitigating wind-induced or human-induced vibrations, but they are not effective for reducing seismic forces, which are much larger and more complex[3] . Providing bracing in walls is a way to increase the stiffness and strength of the structure, but it does not divert the vertical load path. Bracing in walls can help resist lateral forces, but it can also increase the seismic demand on the structure by attracting more inertia forces.

*Therefore, based on this information, the answer is ***C. Base isolation****.*

65. The type of stone masonry in which stones of same height are laid in layers is called:

A. Course rubble masonry

B. Ashlar masonry

C. Un-coursed rubble masonry

D. Random rubble masonry

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*Therefore, based on this information, the answer is **C. Base isolation**.*

66. Which one is false statement about heating, cooling and ventilation?

A. Rough textured surfaces are more absorbers of radiation energy than smooth & shiny metallic surfaces

B. Stack effect occurs when the air inside a vertical stack is warmer than the outside air

C. The use of high-performance HVAC equipment can result in considerable energy emissions, and cost savings

D. Low-performance HVAC provides increased thermal comfort and improved indoor environmental quality

Heating, cooling, and ventilation are the use of various technologies to control the temperature, humidity, and purity of the air in an enclosed space. The goal of heating, cooling, and ventilation is to provide thermal comfort and acceptable indoor air quality within reasonable installation, operation, and maintenance costs. Heating, cooling, and ventilation systems can be used in both domestic and commercial environments, and can have various impacts on energy consumption, emissions, and costs[1].

Some of the statements about heating, cooling, and ventilation are true, while one is false. The true statements are:

- Rough textured surfaces are more absorbers of radiation energy than smooth & shiny metallic surfaces: This is true because rough textured surfaces have a higher emissivity than smooth and shiny metallic surfaces. Emissivity is a measure of how much a surface emits thermal radiation compared to a perfect black body. A higher emissivity means a higher absorption and emission of radiation energy[2].
- Stack effect occurs when the air inside a vertical stack is warmer than the outside air: This is true because stack effect is a phenomenon that results from the difference in air density between the inside and outside

of a building. When the air inside a vertical stack (such as a chimney or a stairwell) is warmer than the outside air, it becomes less dense and rises up, creating a low pressure at the bottom of the stack. This low pressure draws in cooler outside air through openings at the lower levels of the building. The stack effect can affect the natural ventilation and infiltration of a building[3].

- The use of high-performance HVAC equipment can result in considerable energy emissions, and cost savings: This is true because high-performance HVAC equipment refers to systems that have higher efficiency, reliability, durability, and controllability than conventional HVAC equipment. High-performance HVAC equipment can reduce the energy consumption and emissions of a building by using less fuel or electricity to provide the same or better level of heating, cooling, and ventilation. High-performance HVAC equipment can also reduce the operation and maintenance costs of a building by having longer lifespans, fewer breakdowns, and lower repair needs[4].

The false statement is:

- Low-performance HVAC provides increased thermal comfort and improved indoor environmental quality: This is false because low-performance HVAC refers to systems that have lower efficiency, reliability, durability, and controllability than conventional HVAC equipment. Low-performance HVAC equipment can increase the energy consumption and emissions of a building by using more fuel or electricity to provide the same or worse level of heating, cooling, and ventilation. Low-performance HVAC equipment can also decrease the thermal comfort and indoor environmental quality of a building by having poor temperature and humidity control, inadequate ventilation, high noise levels, and frequent malfunctions[4].

Therefore, based on this information, the answer is **D. Low-performance HVAC provides increased thermal comfort and improved indoor environmental quality**.

67. At which parts of design process does the nature of the project. a brief statement about the client, location. Project type, purpose, and extent of work were analyzed?

A. Letter of Agreement

B. Programming and analysis

C. Client Profile / Problem Statement

D. Evaluation

The design process is a tool that helps designers and engineers create solutions that meet the needs and wants of their clients or users. The design process can have different stages and approaches, depending on the type and scope of the project, but it generally follows a common set of steps that involve research, ideation, prototyping, testing, and evaluation[1][2].

Some of the statements about heating, cooling, and ventilation are related to the design process, while one is not. The statements that are related to the design process are:

- A letter of agreement: This is a document that defines the scope, objectives, deliverables, timeline, budget, and responsibilities of a design project. A letter of agreement is usually signed by both parties before the design process begins, and it serves as a contract and a reference for the project[3].

- Programming and analysis: This is a stage of the design process that involves gathering information about the client's needs, wants, goals, preferences, and constraints. Programming and analysis also involves studying the site, context, codes, standards, and regulations of the project. Programming and analysis helps to define the problem statement and the design criteria for the project[4].

- Evaluation: This is a stage of the design process that involves assessing the performance, quality, functionality, usability, aesthetics, and satisfaction of the design solution. Evaluation can be done throughout the design process by using various methods such as surveys, interviews, observations, feedback sessions, etc. Evaluation helps to measure the success of the project and identify areas for improvement.

The statement that is not related to the design process is:

- Client profile / problem statement: This is not a stage of the design process, but rather an outcome or a deliverable of the programming and analysis stage. A client profile is a document that summarizes the characteristics, needs, wants, goals, preferences,

and constraints of the client or user. A problem statement is a concise description of the challenge or opportunity that the design project aims to address. A client profile and a problem statement help to guide and focus the design process.

*Therefore, based on this information, the answer is **C. Client profile / problem statement**.*

68. Which material is more energy efficient than others?

A. Steel

B. Concrete

C. Brick

D. Glass

Energy efficiency of building materials refers to the ability of materials to reduce the energy consumption and emissions of buildings by improving their thermal performance, durability, and recyclability. Energy efficiency of building materials can be measured by various indicators, such as embodied energy, operational energy, life cycle assessment, etc[1].

Some of the statements about energy efficiency of building materials are true, while one is false. The true statements are:

- Steel: Steel is a material that has high strength, durability, and recyclability. Steel can be used for various structural and architectural applications in buildings, such as frames, roofs, cladding, etc. Steel can also reduce the energy consumption and emissions of buildings by enabling lighter and more efficient designs, reducing material waste, and facilitating the integration of renewable energy systems. However, steel also has a high embodied energy and carbon footprint due to its production process, which requires large amounts of coal and iron ore[2].

- Concrete: Concrete is a material that consists of cement, water, and aggregates. Concrete can be used for various structural and architectural applications in buildings, such as foundations, walls, floors, etc. Concrete can also reduce the energy consumption and emissions of buildings by providing thermal mass, fire resistance, and sound insulation. However, concrete also has a high embodied energy and carbon footprint due to its production process, which requires large amounts of limestone and fossil fuels[3].

- Brick: Brick is a material that consists of clay or other minerals that are shaped and fired at high temperatures. Brick can be used for various structural and architectural applications in buildings, such as walls, facades, etc. Brick can also reduce the energy consumption and emissions of buildings by providing thermal mass, fire resistance, and aesthetic value. However, brick also has a high embodied energy and carbon footprint due to its production process, which requires large amounts of clay and fossil fuels.

The false statement is:

- Glass: Glass is a material that consists of silica or other minerals that are melted and cooled into transparent or translucent sheets or panels. Glass can be used for various architectural applications in buildings, such as windows, doors, skylights, etc. Glass can also reduce the energy consumption and emissions of buildings by providing natural light, solar heat gain, and views. However, glass also has a low energy efficiency compared to other materials because it has poor thermal insulation, high heat loss or gain, and high glare. Glass also has a high embodied energy and carbon footprint due to its production process, which requires large amounts of sand and fossil fuels.

Therefore, based on this information, the answer is **D. Glass**.

69. Which of the following item of earth work Will be done first?

A. Site clearance

B. Duping

C. Setting out of works

D. Steps in deep excavation

Earth work is the engineering work that involves the excavation and movement of soil or rock for various purposes, such as construction of foundations, trenches, roads, dams, etc. Earth work requires the use of various tools and equipment, such as hydraulic excavators, tractors, trucks, spades, pickaxes, etc[1].

The sequence of earth work depends on the type and scope of the project, but it generally follows a common set of steps that involve the following activities:

- Site clearance: This is the first step of earth work that involves the removal of vegetation, debris, obstacles, and other unwanted materials from the site. Site clearance is necessary to prepare the site for further work and to avoid any interference or damage to the existing features[2].

- Setting out of works: This is the second step of earth work that involves the marking of the boundaries, centerlines, levels, and dimensions of the excavation and backfilling areas on the ground. Setting out of works is necessary to ensure accuracy and alignment of the earth work according to the design and specifications[2].

- Excavation: This is the third step of earth work that involves the digging and removal of soil or rock from the site to create trenches, pits, foundations, etc. Excavation is done according to the required depth, width, and shape of the earth work. Excavation may require dewatering if groundwater is encountered[2].

- Dumping: This is the fourth step of earth work that involves the transportation and disposal of the excavated material to a designated location. Dumping is done according to the environmental and safety regulations and standards. Dumping may also involve sorting and recycling of some materials[2].

- Backfilling: This is the fifth step of earth work that involves the filling and compaction of soil or rock in the excavated areas to restore the original ground level or to create a stable base for further construction. Backfilling is done according to the required density, moisture content, and gradation of the material. Backfilling may also involve testing and quality control of the material[2].

*Therefore, based on this information, the answer is ****A. Site clearance*****.

70. Consider a canteen with a recommended 10-15 air changes per hour and the ground floor having a volume of 1000m3 and 1st floor volume of 700m3. Calculate the ventilation conductance. (use qv = (1200J/m3K) nV)

A. 25.5 kw

C. 900,000 w

B. 1,260 w

D. 7140 w

To find the ventilation conductance, we need to use the formula:

qv = (1200 J/m3K) nV

where qv is the ventilation heat loss or gain in watts, n is the number of air changes per hour, and V is the volume of the space in cubic meters.

Assuming that the canteen has 15 air changes per hour, which is the upper limit of the recommended range, we can calculate the ventilation conductance for each floor separately and then add them up.

For the ground floor, we have:

qv = (1200 J/m3K) (15 h-1) (1000 m3)

qv = 18,000,000 J/h

qv = 5000 W

For the first floor, we have:

qv = (1200 J/m3K) (15 h-1) (700 m3)

qv = 12,600,000 J/h

qv = 3500 W

Therefore, the total ventilation conductance for the canteen is:

qv = 5000 W + 3500 W

qv = 8500 W

*The answer is **none of the above**. The closest option is D. 7140 W, but it is not correct.*

71. _____line usually parallel to the plot boundness and laid down in each case by the local municipal bodies beyond which nothing can be constructed towards the plot boundary

A. Set-back

B. Room height

C. Site or (plot)

D. Service Road

"Set-back Line" – A line usually parallel to the plot boundaries or center line of a road and laid down in each case by the Authority or as per recommendations of Master/Zonal Plan, beyond which nothing can be constructed towards the plot boundaries excepting with the permission of the Authority

72. Which types of contracts can be highly recommended for construction work of small nature where the cost can be determined in advance?

A. unit price contract

B. cost plus a fixed fee contract

C. Lump sum contract

D. cost plus percentage contract

Construction contracts are legal agreements that specify the terms and conditions of a construction project, such as scope of work, payment, timelines, and penalties. There are different types of construction contracts that suit the varying needs of the parties involved. The most common types are lump sum, time and materials, cost-plus, unit price, and guaranteed maximum price (GMP)[1].

The type of contract that can be highly recommended for construction work of small nature where the cost can be determined in advance is the lump sum contract. A lump sum contract, also called a fixed price contract, establishes a fixed price for all of the materials and labor required to complete a job. This type of contract works especially well for projects with a well-defined scope of work, which enables contractors to make an accurate estimate of the project's cost[1][2].

The advantages of a lump sum contract are:

- It provides certainty and clarity for both the owner and the contractor. The owner knows how much they will pay for the project, and the contractor knows how much they will earn.

- It reduces the risk of cost overruns or disputes over payment. The contractor is responsible for covering any additional costs that may arise during the project, unless there are change orders or unforeseen circumstances that justify a price adjustment.

- It simplifies the bidding and administration process. The owner can easily compare bids from different contractors based on the fixed price, and the contractor does not need to keep track of all the expenses and invoices during the project.

The disadvantages of a lump sum contract are:

- It may lead to higher initial bids. The contractor may include a contingency amount or a higher profit margin in their bid to account for any potential risks or uncertainties that may affect the project's cost.

- It may create an incentive to cut corners or compromise quality. Since the final cost is set in stone, the contractor may wish to save money by using cheaper materials or labor, or by skipping some steps or tests.

- It may limit flexibility and innovation. The contractor may be reluctant to make any changes or improvements to the project's design or execution, even if they are beneficial or requested by the owner, because they may incur additional costs that are not covered by the fixed price.

Therefore, based on this information, the answer is **C. Lump sum contract**.

73. Which of the following IS the mixture of cement. sand, crushed rocks and water when placed in the skeleton of forms and are allowed to cure becomes hard like stones?

A. Cement slurry

B. Cement mortar

C. Cement concrete

D. Cement grouting

The mixture of cement, sand, crushed rocks and water when placed in the skeleton of forms and allowed to cure becomes hard like stones is called cement concrete. Cement concrete is a very strong structural building material composed of cement, sand, and larger aggregate (gravel). It is used to form structural slabs, poured foundations, and other permanent structures[1].

The other options are not correct. They are:

- Cement slurry: This is a mixture of cement and water, with or without other chemical admixtures, that has a fluid consistency. It is used for soil stabilization, filling voids, or sealing cracks in concrete or rock[2][3].

- Cement mortar: This is a mixture of cement, sand, and water, with or without lime, that has a paste-like consistency. It is used as a binding material when building with brick, block, or stone[1][4].

- Cement grouting: This is a process of injecting cement slurry or mortar into cracks, joints, or voids in concrete or rock to fill them up and strengthen them[4].

*Therefore, based on this information, the answer is **C. Cement concrete**.*

74. The Shore temple of Mahabalipuram was built of:

a. Laterite

b. Sandstone

c. Marble

D. Granite

The Shore temple of Mahabalipuram was built of granite. Granite is a hard and durable rock that consists of quartz, feldspar, and mica. Granite is available locally in Mahabalipuram and was used for various structural and architectural applications in the temple complex[1][2].

The other options are not correct. They are:

- Laterite: This is a type of soil that is rich in iron and aluminum oxides. Laterite is used for building materials in tropical and subtropical regions, but it is not suitable for coastal areas because it is easily eroded by saltwater[3].

- Sandstone: This is a type of sedimentary rock that consists of sand grains cemented together by minerals. Sandstone is used for building materials in various regions, but it is not very resistant to weathering and erosion[4].

- Marble: This is a type of metamorphic rock that consists of recrystallized carbonate minerals, such as calcite or dolomite. Marble is used for building materials and sculptures in various regions, but it is not very common in South India[5].

*Therefore, based on this information, the answer is **D. Granite**.*

75 Which one is vertical space defining element among the following?

A. Depressed base plane

B. Enclosed plane

C. Overhead

D. Elevated base plane

*According to one source[1], **vertical elements** are those that define the perpendicular edges of a volume of space and include things like columns or posts. A single vertical plane can also articulate the space which it fronts.*

*Based on this definition, I think the answer to your question is **C. Overhead**, since it is a vertical plane that defines the upper limit of a space. The other options are either horizontal planes or enclosed planes, which are not vertical elements.*

76. Which one is a not architectural aspect of shear walls?

A. Door or window openings can be provided in shear walls

B. Shear walls should be provided along preferably both in length and width

C. Shear walls in buildings must be asymmetrical to reduce twist in buildings

D. Shear walls are more effective when located along exterior perimeter of the building

According to the search results, a shear wall is a vertical element of a system that is designed to resist in-plane lateral forces, typically wind and seismic loads[1]. Shear walls can be made of different materials, such as wood, steel, concrete, or insulated concrete forms[1]. Shear walls are often given in equal length and breadth for structures[3].

*Based on the information above, I think the answer to your question is **C. Shear walls in buildings must be asymmetrical to reduce twist in buildings**. This statement is not an architectural aspect of shear walls, but rather a structural consideration that depends on the geometry, loading, material properties, restraint, and construction of the shear walls[1]. The other statements are architectural aspects of shear walls that affect their design and performance. For example:*

- A. Door or window openings can be provided in shear walls, but they reduce the stiffness and strength of the walls and should be limited in size and number[2].

- B. Shear walls should be provided along preferably both in length and width to increase the lateral stability and stiffness of the structure[2].

- D. Shear walls are more effective when located along exterior perimeter of the building to resist overturning moments and reduce torsional effects[2].

77. Which one of the following is not classified in categories of moving from types of the access in buildings?

A. Escalator

B. elevator or lift

C. Stair

D. Crane

According to the search results, there are different types of access in buildings, depending on the design and function of the building. The types of access are[1]:

- Individual - apartments having their own front door which leads directly outdoors

- Vertical - apartments are accessed directly via a shared lift or stair core

- Horizontal - apartments are accessed from a shared corridor, which connects to a lift or stair core

*Based on the information above, I think the answer to your question is **D. Crane**. This is not a type of access in buildings, but rather a type of equipment used for lifting and moving heavy objects. The other options are types of access in buildings that allow people to move from one level to another. For example:*

- A. Escalator - a moving staircase that carries people between floors of a building[2].

- B. Elevator or lift - a platform or compartment housed in a shaft for raising and lowering people or things to different levels[2].

- C. Stair - a series of steps or flights of steps for going from one level to another[2].

78. The principles of interior design are the ways that designers not use the elements of interior design to:

A. Protect public health, safety and welfare

B. Create diversity of the space

C. Create good decoration/ arrangements

D. Create color variation

79. Which one is different from the other components of landscape?

A. Paved areas, sculptures, furniture, parking areas, edgings

B. Water, paved areas, sculptures, furniture, parking areas

C. Vegetation, pedestrian walkways, paved areas, sculptures, edgings

D. Vegetation, water. paved areas, furniture

According to the search results, a landscape is the visible features of an area of land, its landforms, and how they integrate with natural or man-made features[1]. A landscape can include different components, such as:

- Physical elements of geophysically defined landforms, such as mountains, hills, plains, plateaus, rivers, lakes, ponds, and the sea[1].

- Living elements of land cover, such as indigenous vegetation, plants, and animals[1].

- Human elements, such as different forms of land use, buildings, and structures[1].

- Transitory elements, such as lighting and weather conditions[1].

- Design elements, such as line, color, texture, form, and scale[2].

*Based on the information above, I think the answer to your question is ****B. Water****. This is different from the other components of landscape because it is a physical element of a geophysically defined landform, while the other options are human elements or design elements that are added or modified by people. For example:*

- A. Paved areas, sculptures, furniture, parking areas, edgings - these are human elements or design elements that are used to create functional or aesthetic spaces in a landscape[3][4].

- C. Vegetation, pedestrian walkways, paved areas, sculptures, edgings - these are living elements or human elements or design elements that are used to create natural or artificial spaces in a landscape[3][4].

- D. Vegetation, water. paved areas, furniture - these are living elements or physical elements or human elements or design elements that are used to create diverse and harmonious spaces in a landscape[3][4].

80. What are some helpful areas of study for an entry-level CAD technician?

A. Science and drawing

B. English and music

C. Statistics and history

D. Computer drafting and philosophy

81. Which one is a processed building material?

A. Lime and Cement

B. Stone

C. Wood

D. Mortar

According to the search results, a building material is material used for construction. Many naturally occurring substances, such as clay, rocks, sand, wood, and even twigs and leaves, have been used to construct buildings. Apart from naturally occurring materials, many man-made products are in use, some more and some less synthetic[1]. A processed building material is one that has been extracted or mined from natural sources and then further processed or highly processed to create a new product[2]. Examples of processed building materials are lime, cement, plaster, slate, stone, brick, steel, glass and plastics[2].

*Based on the information above, I think the answer to your question is **A. Lime and Cement**. These are processed building materials because they are made from natural substances such as limestone and clay that have been heated and mixed with other ingredients to form a new product[3]. The other options are not processed building materials because they are either natural or minimally processed. For example:*

- B. Stone - this is a natural building material that is extracted or mined from the earth and used as it is or cut into different shapes and sizes[1].

- C. Wood - this is a natural building material that comes from trees and plants and can be used as it is or cut into different shapes and sizes[1].

- D. Mortar - this is a mixture of sand, water, and cement or lime that is used to bind bricks or stones together[4]. It is not a processed building material by itself, but rather a combination of natural and processed materials.

82. During an urban designing with an integration of landscape and building design which one of the following IS not type of street furniture?

A. Benches for Seating

B. Waste bins

C. Lighting bollards

D. Carriage way

According to the search results, street furniture is a collective term for objects and pieces of equipment installed along streets and roads for various purposes, such as seating, lighting, signage, waste disposal, etc.[1]. Street furniture can reflect local culture or famous aspects of where they are located, and can also affect the aesthetics, visual identity, function, pedestrian mobility and road safety of the urban environment[1]. Examples of street furniture are benches, traffic barriers, bollards, post boxes, phone boxes, streetlamps, traffic lights, traffic signs, bus stops, tram stops, taxi stands, public lavatories, fountains, watering troughs, memorials, public sculptures, and waste receptacles[1]

*Based on the information above, I think the answer to your question is ****D. Carriage way**.** This is not a type of street furniture because it is not an object or a piece of equipment installed along streets and roads for various purposes. A carriage way is a part of a road that is designed for vehicles to travel on[2]. The other options are types of street furniture that serve different functions. For example:*

- A. Benches for Seating - these are street furniture that provide a place to rest and admire views[1].

- B. Waste bins - these are street furniture that encourage people to dispose of their litter properly[1].

- C. Lighting bollards - these are street furniture that provide illumination and security along streets and roads[3].

83. The Standard maximum height of parapet stipulated is:

A. 135cm

B. 120 cm

C. 75 cm

D. 90 cm

According to the search results, a parapet is a low wall that projects above the roof plane and typically spans around the perimeter of the roof area[1]. A parapet can serve various purposes, such as fire protection, wind resistance, water drainage, aesthetics, etc.[1]. The height and thickness of a parapet depend on the type of construction, the design requirements, and the building codes[2][3].

Based on the information above, I think the answer to your question is ****D. 90 cm****. This is not a standard maximum height of parapet stipulated by any code or regulation that I could find. The other options are possible standard maximum heights of parapet depending on the context. For example:

- A. 135 cm - this is the maximum height of a parapet for a building with a roof slope of more than 10 degrees in Australia according to the National Construction Code (NCC) 2022 Volume One[4].

- B. 120 cm - this is the minimum height of a parapet for a building with an accessible roof terrace in Singapore according to the Code on Accessibility in the Built Environment 2022[5].

- C. 75 cm - this is the minimum height of a parapet for a building with a flat roof in India according to the National Building Code of India 2022 Part 4 Fire and Life Safety.

84. An example of Architectural line may be;

A. Monumental

B. Dome

C. wall

D. Street

the correct answer would be:

C. Wall

An architectural line refers to a visual element in architecture that can be defined by various structural elements, such as walls, columns, beams, or any linear element that defines or outlines a space. In this case, a wall is an example of an architectural line as it defines the boundaries of a building or space, separates interior from exterior, and contributes to the overall structure and form of the architecture. While options A (Monumental), B (Dome), and D (Street) are architectural elements or features, they are not specifically representative of architectural lines.

85. Which one is the requirement for partition wall?

A. Tick as possible

B. Heavy as possible

C. Light material is advisable

D. Sound barrier not required

According to the search results, a partition wall is a non-load-bearing wall that separates one room or space from another[1]. A partition wall can be made of different materials, such as bricks, wood, metal, glass, plasterboard, etc.[12]. A partition wall can serve various purposes, such as providing privacy, insulation, soundproofing, fire resistance, aesthetics, etc.[12].

*Based on the information above, I think the answer to your question is ****C. Light material is advisable***. This is a requirement for a partition wall because it reduces the dead load on the structure and makes it easier to install and remove[23]. The other options are not requirements for a partition wall because they are either irrelevant or undesirable. For example:*

- A. Thick as possible - this is not a requirement for a partition wall because it wastes space and material and makes it difficult to handle[23].

- B. Heavy as possible - this is not a requirement for a partition wall because it increases the dead load on the structure and makes it unstable and unsafe[23].

- D. Sound barrier not required - this is not a requirement for a partition wall because it depends on the function and preference of the space. Some spaces may require sound barriers to reduce noise transmission and improve acoustics[24].

86. What Information should be on a BOM (Bill of Materials)?

A. Quantity and Item I

B. Description of Item

C. All are the answer

D. Cost of Item and total Project Cost

According to the search results, a BOM (Bill of Materials) is a centralized source of information used to manufacture a product or a service[1]. It is a list of the raw materials, components, and instructions required to construct, manufacture, or repair a product or service[12]. A BOM can be used for different purposes, such as engineering, design, operations, manufacturing, etc.[12].

*Based on the information above, I think the answer to your question is **C. All are the answer**. This is because a BOM should contain all the information that is necessary to identify, procure, and use the materials and components involved in the production process[1][2][3]. The other options are not complete by themselves because they are only parts of the information that a BOM should have. For example:*

- A. Quantity and Item ID - these are important information that a BOM should have because they specify how many units of each item are needed and how to identify them by their unique codes or numbers[1][2].

- B. Description of Item - this is important information that a BOM should have because it describes the characteristics and features of each item, such as its name, size, shape, color, material, etc.[1][2].

- D. Cost of Item and total Project Cost - these are important information that a BOM should have because they indicate the price of each item and the total budget of the project, which can help in planning purchases, estimating costs, and controlling expenses[1][3].

87. Which one of the following is not true about Design-Bid-build project delivery method?

A. It is Modern form of project delivery

B. It has three phases

C. Dual contracts

D. Linear sequencing of work

According to the search results, Design-Bid-Build (DBB) is a traditional project delivery method that involves three sequential project phases: The design phase, which requires the services of a designer who will design the project; the bid phase, when a contractor is procured; and a build or construction phase, when the project is built by the contractor[1]. The owner contracts separately with the designer and the contractor, and there is no overlap between the design and construction phases[2]. The DBB method is typically used for public projects that require transparency and competition in the bidding process[3].

*Based on the information above, I think the answer to your question is **A. It is Modern form of project delivery**. This statement is not true about Design-Bid-Build project delivery method because it is not a modern form of project delivery, but rather a traditional and common one that has been used for decades, if not centuries[2][3]. The other statements are true about Design-Bid-Build project delivery method because they describe its characteristics and features. For example:*

- B. It has three phases - this is true because DBB has three distinct phases: design, bid, and build[1][2].

- C. Dual contracts - this is true because DBB involves two separate contracts between the owner and the designer, and between the owner and the contractor[1][2].

- D. Linear sequencing of work - this is true because DBB follows a linear sequence of work, where each phase is completed before the next one starts[1][2].

88. Which one is not a goal of site analysis?

A. To achieve a successful design

B. Analyze site features and incorporate them into the design

C. Site analysis involves taking an inventory of site elements without any regards

D. Gather relevant information about the properties of the site

According to the search results, site analysis is the process of researching and analyzing the social, historical, climatic, geographical, legal, and infrastructural characteristics of a given site, and synthesizing these analyses into visual information — usually in the form of site analysis diagrams[1]. Site analysis forms the foundation to a project's conceptual evolution and helps to inform the design of a building or space that will both address and enhance its internal and external context[1][2].

Based on the information above, I think the answer to your question is ****C. Site analysis involves taking** an inventory of site elements without any regards**. This statement is not true about site analysis because site analysis does not involve merely taking an inventory of site elements, but rather evaluating them with regards to their opportunities, constraints, and potential for the design[1][2]. The other statements are true about site analysis because they describe its goals and purposes. For example:

- A. To achieve a successful design - this is a goal of site analysis because site analysis provides a vital foundation and crucial starting point for any architectural project that aims to create a functional, aesthetically pleasing, and context-sensitive design[1][2].

- B. Analyze site features and incorporate them into the design - this is a goal of site analysis because site analysis helps to identify the physical, cultural, social, historical, environmental, and infrastructural features of a site and how they can be integrated or responded to in the design[1][2].

- D. Gather relevant information about the properties of the site - this is a goal of site analysis because site analysis helps to collect and present data about the properties of the site, such as climate, topography, land use, zoning regulations, transportation, and community needs[1][2].

89. Which one is false statement about form?

a. Form is the primary identifying characteristic of a volume.

b. Form is as an element of design; it is a shape with definite size, color and texture.

c. Refers to parts or the whole of a figure that is describable by only three dimensions.

d. Is a characteristic feature of the conceptual element that we call a solid or a volume

According to the search results, form in design is an element of design that refers to the shape or configuration of a volume or an object[1]. Form can be created by combining two or more shapes and can be further enhanced by different tones, textures, and colors[1]. Form can be either geometric or organic, depending on the type and arrangement of the shapes used[2]. Form can also be either two-dimensional or three-dimensional, depending on the illusion of depth created by the design[3].

Based on the information above, I think the answer to your question is ***B. Form is as an element of design; it is a shape with definite size, color and texture****. This statement is false about form because form is not a shape, but rather a combination of shapes that creates a volume or an object[1]. A shape is a two-dimensional area that is defined by an outline or a boundary[1]. A shape can have size, color and texture, but not form[1]. The other statements are true about form because they describe its characteristics and features. For example:*

- *A. Form is the primary identifying characteristic of a volume - this is true because form defines the appearance and structure of a volume or an object in space[1][3].*

- *C. Refers to parts or the whole of a figure that is describable by only three dimensions - this is true because form has three dimensions: length, width, and depth[1][3].*

- *D. Is a characteristic feature of the conceptual element that we call a solid or a volume - this is true because form gives solidity or substance to a volume or an object[1].*

90. Among the following. one is correct about the research.

a. Finding solution to any questions

b. None of the above

c. Research is searching again and again

d. Working in a scientific way to search for truth of some problem

91. Alhambra, Granada is an example of which style of Architecture?

a. Romanesque

b. Byzantine

c. Victorian

d. Moorish

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2 / 2

d. Moorish

The Alhambra in Granada, Spain, is a famous example of Moorish architecture. It is a stunning palace and fortress complex that was built by the Nasrid Dynasty in the mid-13th century. The architectural style of the Alhambra is characterized by intricate geometric patterns, beautiful tilework, stucco decorations, and lush gardens, reflecting the artistic and architectural influences of the Islamic civilization in the region during that period.

92. The development of Postmodern Architecture began in the late 1960s which was characterized by fragmentation, battered walls, sloping floors and windows, slanted and disjointed façade wall is

a. Surrealism

b. Minimalism

c. Modernism

d. De-constructivism

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d. De-constructivism

The development of Postmodern Architecture in the late 1960s introduced a new architectural style that challenged the principles of Modernism. De-constructivism emerged as a prominent movement within Postmodernism, characterized by fragmented forms, distorted geometries, non-orthogonal angles, and an emphasis on the deconstruction of traditional architectural elements. Features such as battered walls, sloping floors and windows, and slanted and disjointed façade walls are common in de-constructivist architecture.

93. In the design of beams of a building

a. Flexural stress is maximum at neutral plane/axis

b. None

c. Increasing the width than depth of the beam is recommended to get higher moment of inertia

d. Lower moment of inertia of the cross-section results in higher deflection of the member

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a. Flexural stress is maximum at neutral plane/axis

In the design of beams, the flexural stress is maximum at the neutral plane or neutral axis. The neutral plane is the plane within the beam where there is no stress or strain. Above the neutral plane, the beam experiences compression, while below the neutral plane, it experiences tension. This distribution of stresses creates bending moments in the beam. Therefore, the flexural stress is highest at the neutral plane.

94. Analogous type of color schemes are:

a. When we use colors of sun and fire on the right side of the color wheel and their respective values as elements that control the composition.

b. When we use colors opposite on the color wheel and their respective values can help us create such contrast that gives a harmonious composition

c. No answer

d. Sort of composition attempts to use 3 to 5 colors next to each other on the color wheel with their respective values

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d. Sort of composition attempts to use 3 to 5 colors next to each other on the color wheel with their respective values

Analogous color schemes are created by using colors that are next to each other on the color wheel. This type of color scheme typically uses 3 to 5 colors that are adjacent to each other on the color wheel. By using colors that are closely related, an analogous color scheme creates a harmonious composition. The colors in an analogous color scheme may have different values (lightness or darkness) to add variation, but they maintain a sense of unity as they are derived from neighboring hues on the color wheel.

95. Air-conditioning system used for cooling buildings types (residential buildings, offices, entire hotels, gyms, movie theatres, and factories).

a. Split AC

b. Window AC

c. Central AC

d. Refrigerator

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c. Central AC

Central air conditioning systems are commonly used for cooling larger buildings such as residential buildings, offices, hotels, gyms, movie theaters, and factories. These systems consist of a central unit that cools and dehumidifies the air, which is then distributed throughout the building using ductwork. Central AC systems provide efficient and uniform cooling for larger spaces and can be controlled centrally to maintain desired temperature levels. Split AC and window AC are typically used for smaller spaces or individual rooms. A refrigerator, on the other hand, is a cooling appliance used specifically for preserving food and beverages.

86. Random sampling is helpful as it is

a. Reasonably accurate

b. Free from personal biases

c. An economical method of data collection

d. All are the answer

ChatGPT

d. All are the answer

Random sampling is a method of data collection in which individuals or items are selected randomly from a larger population. This sampling technique is useful for various reasons:

a. Reasonably accurate: Random sampling helps in obtaining a representative sample from the population, increasing the accuracy of the collected data.

b. Free from personal biases: Random sampling minimizes the potential for personal biases in the selection process. Each member of the population has an equal chance of being included in the sample, reducing the influence of subjective preferences.

c. An economical method of data collection: Random sampling is often a cost-effective method compared to other sampling techniques. It allows researchers to gather sufficient data for analysis while optimizing resources.

Therefore, all of the provided options are correct in describing the benefits of random sampling.

97. Which types of colors do not usually show up on the color wheel?

a. Neutral Colors

b. Analogous Colors

c Complementary Colors

d. Warm Colors

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a. Neutral Colors

The color wheel is a tool used to depict the relationships between different colors. It typically includes primary colors (red, blue, yellow), secondary colors (orange, green, violet), and tertiary colors (red-orange, yellow-orange, etc.). These colors are arranged in a circular fashion to demonstrate their color relationships, such as complementary colors and analogous colors.

Neutral colors, on the other hand, are not typically shown on the color wheel. Neutral colors include black, white, gray, and various shades of brown. They are often used to balance and complement other colors on the color wheel, but they do not have a specific position or relationship within the color wheel structure.

Therefore, the correct answer is a. Neutral Colors.

98. he preparation of surface of stone to obtain plain edges or to obtain stone required size and shape is known as:

a. Quarrying of stone

b. Dressing of stone

c. Seasoning of stone

d. Blasting of stone

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b. Dressing of stone

The preparation of the surface of a stone to obtain plain edges or to achieve the desired size and shape is known as dressing of stone. It involves shaping and smoothing the stone through various processes such as cutting, sawing, grinding, and polishing. Dressing of stone is an important step in the stone processing industry to ensure that the stone meets the required specifications and aesthetic standards for its intended use in construction or decoration.

Therefore, the correct answer is b. Dressing of stone.

99. Churches constructed during Medieval Architecture of Ethiopia, which one of the following church is the best example of the so called "Built-up cave churches"?

a. Yimrehane Kiristos Church

b. Bete Abba Libanos

c. Bete Giorgis church, Lalibela

d. All are the answer

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The best example of the "Built-up cave churches" in Ethiopia during the Medieval Architecture period is the Yimrehane Kiristos Church. This church, located in the region of Tigray, is known for its unique architectural style, which combines elements of cave architecture with built-up structures. The church is constructed within a natural cave and features intricate carvings and paintings. It is considered a masterpiece of Ethiopian rock-cut architecture.

Therefore, the correct answer is a. Yimrehane Kiristos Church.

100. The type of flooring suitable for churches, theatres, public libraries and other places where noiseless floor covering is desired is:

a. Stone flooring

b. Glass flooring

C. Cork flooring

d. Linoleum flooring

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The type of flooring suitable for churches, theatres, public libraries, and other places where a noiseless floor covering is desired is c. Cork flooring. Cork flooring is known for its excellent sound-absorbing properties, making it an ideal choice for spaces where noise reduction is important. Cork flooring is made from the bark of the cork oak tree and has a soft and cushioned feel underfoot. It is also durable, sustainable, and offers thermal insulation.