پوهنتون کاردان
KARDAN UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF MASTER IN CONSTRUCTION ENGINEERING MANAGEMENT

(ENTRY TEST QUESTION PAPER)

Please do not write on this questionnaire!

KABUL
Spring, 2025

Section 1 – Engineering Professional

64 Marks- 40 Minutes

Each question carries 2 Marks

General Mathematics:

Q.1. The number of real solutions of the equation $e^x = x^3$ is:

a. 0 b. 1 c. 2 d. 3

Q.2. he determinant of the matrix $\begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$ is:

a. -2 b. 2 c. 22 d. -22

Q.3. The derivative of $f(x) = In\ (x^2 + 1)$

a. $\frac{2x}{x^2+1}$ b. $\frac{1}{x^2+1}$ c. $2x$ d. $\frac{x}{x^2+1}$

Q.4. The mean of the numbers 2, 3, 5, 7, and 11 is:

a. 5.5 b. 5.6 c. 5.8 d. 6

Q.5. The sum of the first 10 natural numbers is:

a. 50 b. 55 c. 60 d. 65

Profissional Physics:

Q.6 Unit of force in SI system (System International) of units is equal to:

a. Pound b. Newton c. Kilogram d. All

Q.7 A plot between rainfall intensity vs time is called:

a. Hydrograph b. Mass Curve c. Hyetograph d. Isohyet

Q.8 A satellite orbits Earth in a circular path. The force providing its centripetal acceleration is:

a. Gravitational force b. Electrostatic force c. Magnetic force d. Frictional force

Q.9 A diamond sparkles due to:

a. Refraction b. Diffraction c. Polarization d. Total internal reflection

Q.10 Every direct stress is always accompanied by a strain in its own direction and an opposite kind of strain in every direction at right angles to it. Such a strain is known as:

a. Linear strain b. Lateral strain c. Volumetric strain d. Shear strain

Construction Material:

Q. 11 Which type of cement is best suited for marine structures?

a. Ordinary Portland Cement b. Rapid Hardening Cement

c. Sulphate Resisting Cement d. Low Heat Cement

Q. 12 What is the typical water-cement ratio for normal concrete?

a. 0.2 to 0.3 b. 0.4 to 0.6 c. 0.7 to 0.9 d. 0.1 to 1.2

Q. 13 What is the main purpose of adding gypsum to cement?

a. Increase strength b. Reduce cost c. Improve workability d. Control Setting time

Q. 14 Which of the following materials has the highest compressive strength?

a. Wood b. Concrete c. Steel d. Brick

Q. 15 Alloys having more than 2.1% carbon content are referred as:

a. Steel b. Cast Iron c. Pig Iron d. Rough Iron

Q. 16 Which of the following has highest Poisson's ratio?

a. Rubber b. Steel c. Aluminum d. Copper

Construction Management and Engineering Ethics:

Q. 17 Quality control is aimed at:

a. Maintaining the desired quality b. Exceeding the desired quality

c. Continuously improving the quality d. Following the quality

Q. 18 Which of these is correct with respect to a product developed or a service performed?

a. Bad quality is acceptable, but bad grade is not.

b. Bad grade is acceptable, but bad quality is not.

c. Neither bad grade nor quality is acceptable.

d. Grade and quality is the same thing.

Q. 19 A work package is:

a. A task on the Work Breakdown Structure

b. A level 1 activity on the Work Breakdown Structure

c. A deliverable at the lowest level of the Work Breakdown Structure

d. An activity on the Project Schedule

Q. 20 Violating a Non-Disclosure Agreement (NDA) occurs when an individual discloses confidential information covered by a legally binding document. Which situation below is the best example of violating a Non-Disclosure Agreement?

a. Patrick, an employee, discusses project details with a colleague in a private meeting room designated for confidential discussions.

b. Anna, a consultant, signs an NDA with a client and later shares sensitive project information with a competitor.

c. Rachel, a manager, shares general information about the company's future plans during a town hall meeting.

d. Michael, an executive, discloses financial projections during a presentation to potential investors.

Q. 21 A Probationary Period in employment refers to a trial period during which an employee's performance is closely monitored. Which situation below is the best example of a Probationary Period?

a. Emily, a new hire, completes the company's onboarding process and receives a detailed handbook about workplace policies.

b. David, an employee, consistently meets and exceeds performance expectations throughout his tenure.

c. Lisa, a recent graduate, is hired on a three-month trial basis to assess her suitability for a permanent position.

d. Jeff, a seasoned professional, joins a new organization and immediately assumes a leadership role.

Q. 22 People Engaging in Job Shadowing experience a brief period of observing a colleague's daily work routine to gain insights into a particular role or industry. Which situation below is the best example of People Engaging in Job Shadowing?

a. Karen, a software developer, attends a conference to learn about the latest industry trends and advancements.

b. John, a student interested in marketing, spends a day accompanying a marketing manager to learn about their responsibilities.

c. Mike, an experienced salesperson, conducts a training session for new hires to share his sales techniques.

d. Linda, an HR specialist, organizes a team-building workshop to improve collaboration among employees.

Q. 23 A Memorandum of Understanding (MOU) is a formal agreement outlining the terms and details of a partnership or collaboration. Which situation below is the best example of a Memorandum of Understanding?

a. Jeff, a project manager, sends a brief email to inform team members about the upcoming project deadlines.

b. Lisa, a business owner, signs a legal contract with a new supplier to define the terms of their business relationship.

c. Mark and Sarah, representatives of two organizations, draft a document outlining shared goals and responsibilities for a joint project.

d. Emily, a researcher, compiles a report summarizing the findings of a recent market study conducted by her team.

Q. 24 Following document define the legal rights and obligations of the parties and may be described as the regulations under which the contract will be performed.

a. Specifications b. General Conditions of Contract

c. Special provisions d. Bill of Quantities

General Aptitude

Q. 25 A can complete a task in 6 days. B can do it in 3 days. Working together, how long will they take?

a. 1.5 days b. 2 days c. 3 days d. 4.5 days

Q. 26 If the ratio of the ages of A and B is 3:5 and the sum of their ages is 64 years, the age of A is:

a. 24 years b. 30 years c. 36 years d. 40 years

Q. 27 The next number in the sequence 2, 6, 12, 20, 30, __ is:

a. 40 b. 42 c. 44 d. 46

Q. 28 A train travels 500 km in 5 hours. What is its average speed?

a. 50 km/h b. 60 km/h c. 70 km/h d. 100 km/h

Q. 29 If 75% of a number is 50, what is the number?

a. 100 b. 150 c. 300 d. 350

Q. 30 If quantity A is 15% of 200 and quantity B is 25% of 120 then:

a. A > B b. A < B c. A = B d. None

Q. 31 what does it look like, if ▲ is rotated by 180°?

a. ◀ b. ▼ c. ▶ d. ◈

Q.32 A's father is B's son. How is A related to B?

a. Granddaughter b. Grandson c. Daughter d. Niece

Section 2 – Construction Engineering
64 Marks- 40 Minutes

Each Question carries 2 Marks

Q. 33 What is the primary purpose of construction engineering?

a. Design of building b. Project management

c. Planning and execution of infrastructure projects d. Cost estimation

Q. 34 The strength of concrete increases with:

a. Decreasing water-cement ratio b. Increasing water-cement ratio

c. Adding more sand d. Reducing curing time

Q. 35 The bearing capacity of soil is improved by:

a. Increasing the load on the soil b. Soil stabilization techniques

c. Using weak foundations d. Decreasing the depth of foundation

Q. 36 The primary function of a foundation is to:

a. Transfer building loads to the ground b. Provide insulation

c. Beautify the structure d. Reduce construction costs

Q. 37 In reinforced concrete, steel is used because:

a. It reduces weight b. It increases flexibility

c. It has high tensile strength d. It prevents corrosion

Q. 38 Which of the following is a pozzolanic material?

a. Sand b. Cement c. Fly Ash d. Gravel

Q. 39 The most common type of cement used in construction is:

a. Portland Pozzolana Cement b. Rapid Hardening Cement

c. Ordinary Portland Cement d. Sulfate Resisting Cement

Q. 40 The purpose of using admixtures in concrete is to:

a. Increase weight b. Reduce workability

c. Improve properties such as setting time and durability d. Reduce cost

Q. 41 Which test determines the consistency of cement?

a. Slump test b. Vicat apparatus test

c. Compressive strength test d. Impact test

Q. 42 The most commonly used brick size in construction is:

a. 190 mm × 90 mm × 90 mm b. 200 mm × 100 mm × 100 mm

c. 250 mm × 120 mm × 75 mm d. 180 mm × 80 mm × 80 mm

Q. 43 Critical Path Method (CPM) is used for:

a. Cost estimation b. Project scheduling and time management

c. Material testing d. Structural analysis

Q. 44 The Work Breakdown Structure (WBS) is used to:

a. Estimate labor cost b. Divide a project into smaller tasks

c. Improve site safety d. Control concrete quality

Q. 45 Gantt charts are used for:

a. Structural design b. Project scheduling

c. Soil testing d. Cost estimation

Q. 46 Earned Value Management (EVM) helps in:

a. Material selection b. Project cost and schedule control

c. Concrete curing d. Safety management

Q. 47 The main goal of Lean Construction is to:

a. Maximize waste b. Improve productivity and efficiency

c. Increase project cost d. Reduce the number of workers

Q. 48 A Lump Sum Contract is best suited for:

a. Projects with uncertain costs b. Projects with well-defined scope and specifications

c. Emergency repairs d. Public-private partnerships

Q. 49 Liquidated damages in a contract refer to:

a. Bonus for early completion b. Compensation for project delays

c. Payment for material procurement d. Reduction in construction cost

Q. 50 A performance bond is used to:

a. Secure payment for labor b. Reduce The construction timeline

c. Increase the project budget d. Guarantee project completion as per contract

Q. 51 The purpose of Retention Money in contracts is to:

a. Reward early completion b. Provide financial backup for defects
c. Increase cash flow d. Reduce taxation

Q. 52 What is the first step in risk assessment at a construction site?
a. Implement safety measures b. Identify hazards
c. Conduct training d. Buy protective equipment

Q. 53 Personal Protective Equipment (PPE) includes:
a. Helmets, gloves, and safety boots b. Concrete mixers
c. Wooden planks d. Excavators

Q. 54 The main purpose of a Site Safety Plan is to:
a. Reduce construction cost b. Prevent accidents and ensure worker safety
c. Improve material strength d. Manage labor strikes

Q. 55 Which organization sets international construction safety standards?
a. FIDIC b. OSHA c. ISO 9001 d. ASTM

Q. 56 Quality control in construction involves:
a. Ensuring work meets required standards b. Reducing labor costs
c. Increasing project duration d. Eliminating all paperwork

Q. 57 The rock generally used for roofing is:
a. lime stone b. Granite c. Basalt d. Clay

Q. 58 Good quality stones must be:
a. Durable b. Free from clay c. Resist action of acids d. all above

Q. 59 A stone is rejected if it absorbs water more than:
a. 5 % b. 10 % c. 15% d. 20%

Q. 60 For construction of structures under water, the type of lime used is?
a. Hydraulic lime b. fat lime c. quick lime d. pure lime

Q. 61 Good quality cement contents higher percentage of:
a. Tricalcium silicate b. Di-calcium silicate c. clay d. stones

Q. 62 With storage strength of cement:
a. Increase b. Decrease c. Remain the same d. None of above

Q. 63 In a mortar, the binding material is:

a. Cement b. Stones c. Sand d. All above correct

Q. 64 Slump test for concrete is carried out, to determine

a. Strength b. Durability c. Workability d. Water content

Section 3 – Reading Comprehension

64 Marks- 50 Minutes

Each Question Carries 2 Marks

Read the below passages carefully and solve the questions end of each passage.

Passage 1

(1) Medical waste has been a growing concern because of recent incidents of public exposure to discarded blood vials, needles (sharps), empty prescription bottles, and syringes. Medical waste can typically include general refuse, human blood and blood products, cultures and stocks of infectious agents, laboratory animal carcasses, contaminated bedding material, and pathological wastes.

(2) Wastes are generally collected by gravity chutes, carts, or pneumatic tubes, each of which has its own advantages and disadvantages. Chutes are limited to vertical transport, and there is some risk of exhausting contaminants into hallways if a door is left open during use. Another disadvantage of gravity chute is that the waste container may get jammed while dropping, or it may be broken upon hitting the bottom. Carts are primarily for horizontal transport of bagged or containerized wastes. The main risk here is that bags may be broken or torn during transport, potentially exposing the worker to the wastes. Using automated carts can reduce the potential for exposure. Pneumatic tubes offer the best performance for waste transport in a large facility. Advantages include high-speed movement, movement in any direction, and minimal intermediate storage of untreated wastes. However, some objects cannot be conveyed pneumatically.

(3) Off-site disposal of regulated medical wastes remains a viable option for smaller hospitals (those with less than 150 beds). Some preliminary on-site processing, such as compaction or hydro pulping, may be necessary prior to sending the waste off site. Compaction reduces the total volume of solid wastes, often reducing transportation and disposal costs, but it does not change the hazardous characteristics of the waste. Compaction may not be economical if transportation and disposal costs are based on weight rather than volume.

(4) Hydro pulping involves grinding the waste in the presence of an oxidizing fluid, such as hypochlorite solution. The liquid is separated from the pulp and discharged directly into the sewer unless local limits require additional pretreatment prior to discharge. The pulp can often be disposed of at a landfill. One advantage is that waste can be rendered innocuous and reduced in size within the same system. Disadvantages are the added operating burden, difficulty of controlling fugitive emissions, and the difficulty of conducting microbiological tests to determine whether all organic matters and infectious organisms have been destroyed from the waste.

(5) On-site disposal is a feasible alternative for hospitals generating two tons or more per day of total solid waste. Common treatment techniques include steam sterilization and incineration. Although other options are available, incineration is currently the preferred method for on-site treatment of hospital waste.

(6) Steam sterilization is limited in the types of medical waste it can treat, but is appropriate for laboratory cultures and/or substances contaminated with infectious organisms. The waste is subjected to steam in a sealed, pressurized chamber. The liquid that may form is drained off to the sewer or sent for processing. The unit is then reopened after a vapor release to the atmosphere, and the solid waste is removed for further processing or disposal. One advantage of steam sterilization is that it has been used for many years in hospitals to sterilize instruments and containers and to treat small quantities of waste. However, since sterilization does not change the appearance of the waste, there could be a problem in gaining acceptance of the waste for landfilling.

(7) A properly designed, maintained, and operated incinerator achieves a relatively high level of organism destruction. Incineration reduces the weight and volume of the waste as much as 95% and is especially appropriate for pathological wastes and sharps. The most common incineration system for medical waste is the controlled-air type. The principal advantage of this type of incinerator is low particulate emissions. Rotary-kiln and grate-type units have been used, but use of grate-type units has been discontinued because of high air emissions. The rotary kiln also puts out high emissions, and the costs have been prohibitive for smaller units.

Q.65 What has been a growing concern regarding medical waste?

a. Exposure to chemicals

b. Improper disposal of plastic

c. Recent incidents of public exposure

d. Lack of proper waste bins

Q.66 What are the disadvantages of gravity chutes for waste collection?

a. Limited to vertical transport and potential for contamination

b. High-speed movement and minimal intermediate storage

c. Limited to horizontal transport and broken bags

d. Reduced volume of solid wastes and cost reduction

Q.67 What is the main risk associated with carts for waste transport?

a. Bags being broken or torn during transport

b. Exhausting contaminants into hallways

c. Difficulty in controlling fugitive emissions

d. Potential for exposure during manual handling

Q.68 What is the advantage of using pneumatic tubes for waste transport?

a. Limited to vertical transport

b. Potential for exposure

c. High-speed movement in any direction

d. Exposure to infectious organisms

Q.69 For which hospitals is off-site disposal of regulated medical wastes a viable option?

a. Those with less than 50 beds

b. Those with less than 100 beds

c. Those with less than 150 beds

d. Those with more than 200 beds

Q.70 What is a disadvantage of compaction in on-site waste processing?

a. Reduction in transportation and disposal costs

b. Change in hazardous characteristics of waste

c. Difficulty of controlling fugitive emissions

d. Economical if based on weight

Q.71 Which treatment technique is currently the preferred method for on-site treatment of hospital waste?

a. Steam sterilization

b. Compaction

c. Hydro pulping

d. Incineration

Passage 2:

(1) The cheetah, known for its incredible speed and distinctive spotted coat, is the fastest land animal on Earth. With the ability to accelerate from 0 to 60 miles per hour in just a few seconds, the cheetah is a marvel of speed and agility. Its slender, aerodynamic body, lightweight frame, and long legs contribute to its remarkable running capabilities.

(2) Unlike other big cats, the cheetah relies on speed rather than strength to catch its prey. Cheetahs have specialized adaptations, including large nasal passages and lungs, to provide efficient oxygen intake during high-speed chases. Their non-retractable claws provide traction, acting like cleats, and their tails help maintain balance while making sharp turns during pursuits.

(3) Despite their remarkable speed, cheetahs face challenges in the wild. Habitat loss, human-wildlife conflict, and competition with larger predator's impact cheetah populations. Conservation efforts are crucial to ensuring the survival of these magnificent creatures.

(4) Cheetah populations are concentrated in certain regions of Africa, with a small population also found in Iran. Efforts to protect and preserve cheetah habitats, mitigate conflicts with humans, and address illegal wildlife trade are essential for the long-term survival of these endangered big cats.

(5) Conservationists and researchers work to raise awareness about cheetahs and implement measures to safeguard their future. Public support, habitat conservation, and

sustainable coexistence with local communities are key components of successful cheetah conservation initiatives.

Q.72 What is the topic of this passage?

a. conservation of big cats b. the speed of cheetahs

c. habitat loss d. the distinctive coat of cheetahs

Q.73 What is the main idea of the passage?

a. Cheetahs are in danger of extinction. b. Conservation efforts are crucial for cheetah survival.

c. Cheetahs have a distinctive spotted coat. d. Cheetahs rely on strength to catch prey.

Q.74 As used in the passage, the underlined word mitigate most nearly means

a. worsen b. prevent c. alleviate d. enhance

Q.75 The author of the passage probably believes that

a. habitat conservation is unnecessary. b. cheetahs are not endangered.

c. conservation initiatives require public support. d. human-wildlife conflict benefits cheetahs.

Q.76 As used in the passage, the underlined word concentrated most nearly means

a. spread out. b. focused. c. diluted. d. expanded.

Passage 3:

One of the most hazardous conditions a firefighter will ever encounter is a backdraft (also known as a smoke explosion). A backdraft can occur in the hot-smoldering phase of a fire when burning is incomplete and there is not enough oxygen to sustain the fire. Unburned carbon particles and other flammable products, combined with the intense heat, may cause instantaneous combustion if more oxygen reaches the fire.

Firefighters should be aware of the conditions that indicate the possibility for a backdraft to occur. When there is a lack of oxygen during a fire, the smoke becomes filled with carbon dioxide or carbon monoxide and turns dense gray or black. Other warning signs of a potential backdraft are little or no visible flame, excessive heat, smoke leaving the building in puffs, muffled sounds, and smoke-stained windows. Proper ventilation will make a backdraft less likely. Opening a room or building at the highest point allows heated gases and smoke to be released gradually. However, suddenly breaking a window or opening a door is a mistake, because it allows oxygen to rush in, causing an explosion.

Q.77 A backdraft is a dangerous condition for firefighters mainly because

a. there is not enough oxygen for breathing.
b. the heat is extremely intense.
c. the smoke is dangerously thick.
d. an explosion occurs.

Q.78 Which of the following is not mentioned as a potential backdraft warning sign?

a. windows stained with smoke
b. flames shooting up from the building
c. puffs of smoke leaving the building
d. more intense heat than usual

Q.79 To prevent the possibility of a backdraft, a firefighter should

a. carry an oxygen tank.
b. open a door to allow gases to escape.
c. make an opening at the top of the building.
d. break a window to release carbon particles.

Q.80 When compared with a hot, smoldering fire, a fire with visible, high-reaching flames

a. has more oxygen available for combustion.
b. has more carbon dioxide available for consumption.
c. produces more dense gray smoke.
d. is more likely to cause a backdraft.

Passage 4:

In recent years, technology has played a transformative role in education. The integration of digital tools and online resources has reshaped traditional learning environments, offering new possibilities for both students and educators. Virtual classrooms, interactive simulations, and online collaboration platforms have become integral components of modern education. This shift has not only expanded access to educational materials but has also fostered innovative teaching methods. However, challenges such as the digital divide and the need for effective digital literacy persist. Striking a balance between technological integration and equitable access remains a key consideration in shaping the future of education.

Q.81 What role has technology played in education in recent years?

a. A limited role
b. A transformative role
c. A traditional role
d. No role at all

Q.82 What has reshaped traditional learning environments, according to the passage?

a. The absence of technology
b. Online collaboration platforms
c. Lack of digital tools
d. Conventional teaching methods

Q.83 What are considered integral components of modern education in the passage?

a. Traditional textbooks
b. Virtual classrooms
c. Outdoor learning
d. Static learning materials

Q.84 Besides expanding access to educational materials, what else has the integration of technology done?

a. Limited access b. Fostered innovative teaching methods

c. Excluded students d. Restricted collaboration

Q.85 What challenges persist despite the transformative role of technology?

a. Digital integration challenges b. The need for more traditional methods

c. The digital divide and digital literacy d. Lack of interest in education

Q.86 What is a key consideration in shaping the future of education, according to the passage?

a. Traditional teaching methods b. The absence of technology

c. Equitable access and technological integration d. Expanding the digital divide

Q.87 What remains a challenge in education, even with the integration of technology?

a. Lack of innovative teaching methods b. The absence of digital tools

c. The digital divide and the need for digital literacy d. The rejection of online collaboration platforms

Passage 5:

Many great inventions are greeted with ridicule and disbelief. The invention of the airplane was no exception. Although many people who heard about the first powered flight on December 17, 1903, were excited and impressed, others reacted with peals of laughter. The idea of flying an aircraft was repulsive to some people. Such people called Wilbur and Orville Wright, the inventors of the first flying machine, impulsive fools. Negative reactions, however, did not stop the Wrights. Impelled by their desire to succeed, they continued their experiments in aviation.

Orville and Wilbur Wright had always had a compelling interest in aeronautics and mechanics. As young boys, they earned money by making and selling kites and mechanical toys. Later, they designed a newspaper-folding machine, built a printing press, and operated a bicycle-repair shop. In 1896, when they read about the death of Otto Lilienthal, the brother's interest in flight grew into a compulsion.

Lilienthal, a pioneer in hang-gliding, had controlled his gliders by shifting his body in the desired direction. This idea was repellent to the Wright brothers, however, and they searched for more efficient methods to control the balance of airborne vehicles. In 1900 and 1901, the Wrights tested numerous gliders and developed control techniques. The brothers' inability to obtain enough lift power for the gliders almost led them to abandon their efforts.

After further study, the Wright brothers concluded that the published tables of air pressure on curved surfaces must be wrong. They set up a wind tunnel and began a series of experiments with model wings. Because of their efforts, the old tables were repealed in time and replaced by the first reliable figures for air pressure on curved surfaces. This work, in turn, made it possible for them to design a machine that would fly. In 1903 the

Wrights built their first airplane, which cost less than one thousand dollars. They even designed and built their own source of propulsion, a lightweight gasoline engine. When they started the engine on December 17, the airplane pulsated wildly before taking off. The plane managed to stay aloft for twelve seconds, however, and it flew one hundred twenty feet.

By 1905 the Wrights had perfected the first airplane that could turn, circle, and remain airborne for half an hour at a time. Others had flown in balloons or in hang gliders, but the Wright brothers were the first to build a full-size machine that could fly under its own power. As the contributors to one of the most outstanding engineering achievements in history, the Wright brothers are accurately called the fathers of aviation.

Q. 88 The idea of flying an aircraft was _____to some people.

a. boring b. distasteful c. exciting d. needless

Q. 89 People thought that the Wright brothers had _____.

a. acted without thinking b. been negatively influenced.

c. been too cautious d. had not given enough thought

Q.90 The Wright's interest in flight grew into a _____.

a. financial empire b. plan c. need to act d. foolish thought

Q.91 Lilienthal's idea about controlling airborne vehicles was _____the Wrights.

a. proven wrong by b. opposite to the ideas of c. disliked by d. accepted by

Q.92 The old tables were __ and replaced by the first reliable figures for air pressure on curved surfaces.

a. Destroyed b. canceled c. multiplied d. discarded

Passage 6:

(1) The importance of a healthy lifestyle cannot be overstated. Adopting habits that prioritize physical and mental well-being contributes to overall happiness and longevity.

(2) Regular exercise is a key component of a healthy lifestyle. It not only helps in maintaining a healthy weight but also improves cardiovascular health, strengthens muscles, and boosts mood. Whether it's a brisk walk, a gym workout, or engaging in a favorite sport, finding a form of exercise that one enjoys is essential.

(3) Nutrition plays a significant role in maintaining good health. Consuming a balanced diet that includes a variety of fruits, vegetables, lean proteins, and whole grains provides the body with essential nutrients. Hydration is equally important, and adequate water intake supports various bodily functions.

(4) Mental well-being is as crucial as physical health. Practices like mindfulness, meditation, and sufficient sleep contribute to mental clarity and emotional resilience. Balancing work,

social connections, and personal time is key to reducing stress and promoting mental wellness.

Q.93 What is a key component of a healthy lifestyle?

a. Irregular sleep patterns
b. Regular exercise
c. Excessive fast food consumption
d. Lack of social connections

Q.94 What role does nutrition play in maintaining good health?

a. Consuming only fast food
b. Ignoring hydration
c. Balancing diet with fruits, vegetables, lean proteins, and whole grains
d. Relying solely on supplements

Q.95 How can mental well-being be promoted?

a. Avoiding sleep
b. Engaging in excessive exercise
c. Practicing mindfulness and meditation
d. Ignoring social connections

Q.96 Why is hydration important for the body?

a. It has no impact on health
b. It supports various bodily functions
c. It increases stress levels
d. It harms cardiovascular health

Section 4 – English Proficiency

64 Marks- 30 Minutes

Each Question carries 2 Marks

Instructions: For the following questions, choose the answer that best completes the comparison.

Q. 97 hesitant: decisive: cautious: _____.

a. reckless b. careful c. indifferent d. spontaneous

Q. 98 obscure: prominent: concealed: _____.

a. revealed b. exposed c. hidden d. apparent

Q. 99 erratic: predictable: unstable: _____.

a. consistent b. erratic c. uncertain d. variable

Q. 100 harmony: discord: agreement: _____.

a. dispute b. consensus c. unity d. division

Q. 101 diligent: lazy: industrious: _____.

a. lethargic b. hardworking c. inactive d. idle

Q. 102 subtle: obvious: discreet: _____.

a. overt b. covert c. hidden d. plain

Q. 103 obsolete: current: outdated: _____.

a. modern b. contemporary c. ancient d. vintage

Q. 104 reluctant: eager: hesitant: _____.

a. unwilling b. enthusiastic c. resistant d. unwilling

Q. 105 radiant: dull: luminous: _____.

a. gloomy b. bright c. radiant d. vivid

Instructions: Choose the synonym for each of the words in italics.

Q. 106 Choose the synonym for the word exquisite.

a. beautiful b. ordinary c. ugly d. simple

Q. 107 Which word means the same as inherent?

a. external b. innate c. acquired d. temporary

Q. 108 Choose the synonym for the word ephemeral.

a. permanent b. fleeting c. eternal d. enduring

Q. 109 Which word means the same as ubiquitous?

a. scarce b. rare c. abundant d. omnipresent

Q. 110 Choose the synonym for the word exacerbate.

a. alleviate b. worsen c. improve d. mitigate

Q. 111 Which word means the same as quixotic?

a. practical b. realistic c. idealistic d. pragmatic

Q. 112 Choose the synonym for the word ephemeral.

a. enduring b. lasting c. transient d. permanent

Q. 113 Which word means the same as furtive?

a. transparent b. secretive c. open d. candid

Q. 114 Choose the synonym for the word resilient.

a. fragile b. sturdy c. delicate d. weak

Q. 115 Which word means the same as ephemeral?

a. perpetual b. enduring c. eternal d. momentary

Instructions: Choose the correct spelling for the missing word in each of the following sentences.

Q. 116 She shed _____ tears when she heard the tragic news.

a. copious b. scant c. nonchalant d. genteel

Q. 117 After graduation, Charles requested a/an _____ so that he did not have to pay his school loans immediately.

a. surrogate b. deferment c. tincture d. improvement

Q. 118 The professor's lecture was so _____ that many students struggled to stay awake.

a. captivating b. tedious c. arduous d. pristine

Q. 119 Maria has a _____ for remembering names, even after meeting someone briefly.

a. propensity b. disdain c. penchant d. detour

Q. 120 The detective found a _____ clue that led to the solution of the mystery.

a. cryptic b. overt c. lucid d. mundane

Q. 121 The chef used a _____ of herbs and spices to enhance the flavor of the dish.

a. mishmash b. debacle c. modicum d. euphoria

Q. 122 The mountain climber faced a _____ challenge as he attempted to reach the summit in severe weather conditions.

a. daunting b. frivolous c. austere d. whimsical

Q. 123 The author's writing style is known for its _____ and elegance.

a. verbosity b. succinctness c. ambiguity d. fallacy

Q. 124 The musician's performance was met with _____ applause from the audience.

a. tepid b. raucous c. reticent d. verbose

Q. 125 The detective gathered _____ evidence to support the case against the suspect.

a. incontrovertible b. dubious c. peripheral d. superfluous

Q. 126 The artist used a _____ of colors to create a vibrant and visually appealing painting.

a. monochrome b. myriad c. dichotomy d. repertoire

Q. 127 The student provided _____ explanations to clarify the complex scientific concept.

a. confusing b. ambiguous c. lucid d. obscure

Q. 128 In the negotiation, the diplomat showcased a _____ understanding of the geopolitical issues.

a. superficial b. profound c. trivial d. redundant

Section 5 – General Knowledge

64 Marks- 20 Minutes

Each Question carries 2 Marks

Q. 129 In recent years, which of the following countries has had the highest total carbon dioxide (CO_2) emissions in the world?

a. United States b. China c. Canda d. India

Q. 130 Which of the following organizations oversees the regulation of global trade?

a. World Health Organization (WHO) b. International Monetary Fund (IMF)

c. World Trade Organization (WTO) d. International Chamber of Commerce (ICC)

Q. 131 Which of the following is classified as a renewable energy source?

a. Natural Gas b. Nuclear Power c. Solar d. Coal

Q. 132 According to the waste management hierarchy, which of the following represents the preferred order of actions for construction waste management?

a. Reduce → Reuse → Recycle → Dispose

b. Dispose → Recycle → Reuse → Reduce

c. Recycle → Reuse → Reduce → Dispose

d. Reuse → Reduce → Recycle → Dispose

Q. 133 What is the capital city of Australia?

a. Sydney b. Melbourne c. Canberra d. Brisbane

Q. 134 In which year did World War I begin?

a. 1905 b. 1914 c. 1921 d. 1939

Q. 135 Ultra-High-Performance Concrete (UHPC) is characterized by:

a. High embodied carbon b. Low thermal mass

c. Rapid biodegradability d. High tensile strength

Q. 136 What is the currency of China?

a. Yuan b. Won c. Yen d. Ringgit

Q. 137 Which river is the longest in the world?

a. Nile b. Amazon c. Yangtze d. Mississippi

Q. 138 Which gas makes up the majority of Earth's atmosphere?

a. Oxygen b. Nitrogen c. Carbon Dioxide d. Hydrogen

Q. 139 Who is known as the "Father of Computer Science"?

a. Bill Gates b. Alan Turing c. Steve Jobs d. Charles Babbage

Q. 140 In which of the following situations would drones provide the least utility in construction site operation?

a. Stockpile volume calculation b. Pouring foundations

c. Thermal insulation inspection d. Progress monitoring

Q. 141 What is the largest ocean on Earth?

a. Atlantic b. Indian c. Southern d. Pacific

Q. 142 Who painted the Mona Lisa?

a. Vincent van Gogh b. Pablo Picasso c. Leonardo da Vinci d. Michelangelo

Q. 143 The UN's Sustainable Development Goal (SDG) 11 targets:

a. Climate action b. Affordable and clean energy

c. Quality education d. Sustainable cities and communities

Q. 144 Which of the following organizations publishes the International Building Code (IBC)?

a. ASHRAE b. ICC c. NFPA d. ANSI

Q. 145 Artificial Intelligence (AI) in construction is primarily used for:

a. Pouring concrete b. Structural load testing

c. Architectural drafting d. Predictive analytics for risk management

Q. 146 Which planet is known as the Red Planet?

a. Venus b. Mars c. Jupiter d. Saturn

Q. 147 The advantages of 5G connectivity for construction is to improve:

a. Crane load capacity b. Real-time data transmission

c. Material costs d. Worker union negotiations

Q. 148 Smart Cities depends on:

a. Manual traffic control b. Traditional zoning laws

c. IoT and data analytics d. Fossil fuel energy

Q. 149 What is the smallest whole number?

a. 0 b. 1 c. 2 d. 3

Q. 150 Globalization has direct impact on:

a. Economy b. National security c. Society d. All of them

Q. 151 Effective communication is?

a. The sending of massages

b. The transfer of message from sender to receiver

c. Receiving of message

d. The transfer of message from sender to receiver and get the desired response.

Q. 152 What is the chemical symbol for gold?

a. Au b. Ag c. Fe d. Cu

Q. 153 "Dark Factories" in construction refer to:

a. Unlit worksites b. Fully automated off-site production

c. Low-energy buildings d. Illegal labor practices

Q. 154 In which year did World War II end?

a. 1941 b. 1945 c. 1950 d. 1960

Q. 155 Project feasibility report is aimed at;

a. Informing the people b. Attracting the customer

c. Justifying the investment d. Giving details of resources

Q. 156 Which country is the largest exporter of crude oil as of 2024?

a. Russia b. United States c. Canada d. Saudi Arabia

Q. 157 What is the largest mammal in the world?

a. Elephant b. Blue Whale c. Giraffe d. Gorilla

Q. 158 Where is the largest dam in the world by structural volume and power capacity?

a. China b. Panama c. Pakistan d. Japan

Q. 159 In which country did the Industrial Revolution begin?

a. United States b. Germany c. France d. United Kingdom

Q. 160 What tool is typically used for quality control in construction projects to monitor defects and manage corrective actions?

a. Critical Path Method b. Punch list c. Gantt Chart d. Work flow chart

THE END