



BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
MID TERM EXAMINATION 2024-25
ARTIFICIAL INTELLIGENCE (417)



Class: IX
Date: 19.09.2024
Name:

Duration: 2 hrs.
Max Marks: 50
Exam No. :

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of 21 questions in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. All questions of a particular section must be attempted in the correct order.
5. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
 - i. This section has 05 questions.
 - ii. Marks allotted are mentioned against each question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
6. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section has 16 questions.
 - ii. A candidate has to do 11 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q.(1) Answer any 4 out of the given 6 questions on Employability Skills. (4 x 1 = 4)

- (i) Effective writing skill is the product of long hours of And practices.
(a) Thinking (b) Knowledge
(c) Preparation (d) None of the above
- (ii) According to Dr. Albert Mehrabian, one of the pioneers in the field of body language, spoken words account for of what a listener perceives.
(a) 7 per cent (b) 38 per cent
(c) 40 per cent (d) None of the above
- (iii) Which of the following shows your ability to participate as a member of a team ?
(a) Interpersonal skill (b) Communication skill
(c) None of the above (d) All of the above
- (iv) General feeling of self-worth is known as :
(a) Self-confidence (b) Self-esteem
(c) Self-monitoring (d) None of the above
- (v) RAM is a part of :
(a) Primary memory (b) Secondary memory
(c) Human memory (d) None of the above
- (vi) What kind of entity is an operating system ?
(a) Hardware (b) Software
(c) Both (a) and (b) (d) None of these

Q.(2) Answer any 5 questions out of the given 6 questions on Introduction to Artificial Intelligence.

(5 x 1 = 5)

- (i) The first “Intelligent” humanoid robot, built in Japan in 1972 was called
(a) Shakey (b) Sophia (c) WABOT-1 (d) Roomba
- (ii) Who is called the Father of Artificial Intelligence ?
(a) John McCarthy (b) Herbert Simon (c) Allen Newell (d) Allan Turing
- (iii) The idea of “The Imitation Game” was proposed by
(a) Rossum (b) Arthur Samuel (c) Alan Turing (d) John McCarthy
- (iv) The first industrial robot to work on a General Motors assembly line is
(a) Roomba (b) Eliza (c) Unimate (d) Kismet
- (v) The first general purpose mobile robot, also called the “First electronic person” is
(a) David (b) ASIMO (c) Unimate (d) Shakey
- (vi) A humanoid robot known as the first “Robot Citizen” is called
(a) Sophia (b) Clarke (c) Roomba (d) Eliza

Q.(3) Answer any 5 questions out of the given 6 questions on Applications and Future Trends of Artificial Intelligence.

(5 x 1 = 5)

- (i) A technology used in unmanned vehicles like self-driving cars and drones is called
(a) Hybrid technology (b) Artificial Intelligence
(c) Space technology (d) Solid state Intelligence
- (ii) The first widely-used commercial form of Artificial Intelligence (AI) is being used in many popular products like microwave ovens, automobiles, washing machines etc. What is the name of this AI ?
(a) Boolean Logic (b) Fuzzy Logic
(c) Human Logic (d) Functional Logic
- (iii) A program that is used to detect unsolicited and unwanted email and prevent those messages from getting to a user’s inbox.
(a) Auto response (b) Spam Filter
(c) Email Filter (d) email Blocker
- (iv) Which company has launched “ECHO”, an AI enabled product ?
(a) Google (b) Philips (c) Amazon (d) Samsung
- (v) Transportation apps like Uber use which of the following to find the fastest route ?
(a) Driver calls the traffic department to know congestion free route.
(b) Driver listens to the radio and gets regular updates on traffic.
(c) Driver surfs through AI enabled maps like google maps on smartphone.
(d) Driver asks for suggestions from the client.
- (vi) An AI enabled Robot is conducting a class instead of a human teacher. Which of the following is quite difficult for the robot to demonstrate ?
(a) Lesson planning (b) Getting attendance
(c) Emotional Intelligence (d) Dictating homework

Q.(4) Answer any 5 questions out of the given 6 questions on Artificial Intelligence Project Cycle.

(5 x 1 = 5)

- (i) Which of the following is not valid for Data Acquisition ?
(a) Web Scraping (b) Surveys (c) Sensors (d) Announcements
- (ii) Which of the following comes under Problem Scoping ?
(a) System Mapping (b) 4Ws Canvas
(c) Data Features (d) Web Scraping
- (iii) If an arrow goes from X to Y with a –(minus) sign, it means that
(a) If X increases, Y decreases (b) The direction of relation is opposite
(c) If X increases, Y increases (d) It is a bi-directional relationship

- (iv) A shows the components and boundaries of a system and the components of the environment at a specific point in time.
- (a) Choropleth Map (b) System Map
(c) Concept Map (d) Mind Map
- (v) is the presentation of data in graphical format.
- (a) Data Exploration (b) Data Visualisation
(c) Data Modelling (d) Data Presentation
- (vi) Air pollution kills an estimated seven million people worldwide every year. WHO data shows that 9 out of 10 people breathe toxic air. For smog hanging over cities to smoke inside the home, air pollution poses a major threat to human health and climate. The major pollution sources include vehicles, power generation, agriculture waste incineration and industry. Harmful gases like SO₂, NO₂, CO are emitted directly into air because of pollution. Deploying an air quality index monitor is one way that would help to know the local air quality and take action to protect their health. Taking this as the problem, choose which of the following would be the ideal problem statement template.
- (a) Our WHO have a problem that people breathe toxic air when smog hangs over cities. An ideal solution would be to shut down industries and stop the movement of vehicles in major cities.
- (b) Our people have a problem that they die in accidents when more vehicles are used. An ideal solution would be to stop the movement of vehicles in major cities.
- (c) Our people have a problem that air pollution has damaging effects on human health when harmful gases like SO₂, NO₂, CO are emitted directly into air. An ideal solution would be to develop an air quality index monitor so that one can know the local air quality and take action to protect their health.
- (d) Our WHO have a problem that people die every year when there is an increase in the number of vehicles and industries. An ideal solution would be to make sure people stay indoors to protect their health.

Q.(5) Answer any 5 questions out of the given 6 questions on Program Design Aids.

(5 x 1 = 5)

- (i) Which one of the following is a program planning tool ?
- (a) Decision tree (b) Flowchart
(c) Machine Learning (d) Both (a) and (b)
- (ii) Which of the following program planning tool allows the programmers to plan program logic by writing program instruction in an ordinary language ?
- (a) Flowchart (b) Pseudocode (c) Program (d) Loops
- (iii) Which one of the following is not a characteristics of a good algorithm ?
- (a) Finiteness (b) Effectiveness
(c) Ambiguity (d) Feasibility
- (iv) In a flowchart how are symbols connected ?
- (a) Symbols do not get connected together in a flowchart
(b) With lines and an arrow to show the direction of flow
(c) With dashed lines and numbers
(d) With solid lines to link events
- (v) Reema wants to know when can algorithms be used ?
- (a) Only with computers (b) Only when programming
(c) Only with flowcharts (d) Any time to design solutions to problems
- (vi) Ojas wants to know about flowchart. Which of the following is true about it ?
- (a) Helps you plan out computer code
(b) It is a type of graphic diagram that represents an algorithm
(c) Uses shapes to help organize a process
(d) All of the above

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 4 questions on Employability Skills

(3 x 2 = 6)

- Q. (6) What is communication ? Explain the various methods of communication.
Q. (7) Explain any four factors (areas) building self-confidence of a person.
Q. (8) What is the difference between hardware and software, in terms of physical existence ?
Explain by giving suitable example.
Q. (9) Explain Primary and secondary memory of a computer system in detail.

Answer any 4 out of the given 6 questions on Subject Specific Skills.

(4 x 2 = 8)

- Q.(10) What is AI winters ? Explain.
Q.(11) Differentiate between Narrow AI and General AI.
Q.(12) Explain Spam filter.
Q.(13) What is Data visualisation ? Write and explain any two data visualisation techniques.
Q.(14) Explain an algorithm using an example.
Q.(15) Draw flowchart and write an algorithm to find Area and Perimeter of Square.

Answer any 4 out of the given 6 questions on Subject Specific Skills.

(4 x 3 = 12)

- Q.(16) Give any three advantages and disadvantages each of AI.
Q.(17) Explain any three limitations of Artificial Intelligence.
Q.(18) How is AI being used in our daily lives ? Write and explain any three uses of it.
Q.(19) What is an Artificial Intelligent Project Cycle ? Explain all the steps involved in it.
Q.(20) Differentiate between an Algorithm and Flowchart. (Min. three points)
Q.(21) Write three advantages and disadvantages each of using a flowchart.

***** ALL THE BEST *****