RASHTRA SHAKTI VIDYALAYA,
SESSION 2023-24
HOLIDAY HOMEWORK
CLASS XI

SUBJECT: ENGLISH

1. Write the summary of:
i. A Photograph ii. The Laburnum Top

2. State all the poetic devices used in the above mentioned poems, along with the lines.

3. Prepare four Speeches of one minute each on topic of your choice, for the purpose of ASL.

4. Attempt two questions each on editing and omitting.
(Grammar) from sample papers.

5. Write articles of 150-200 words on the following topics:
i. Child Labour
ii. Adult Literacy
iii. Global Terrorism-A Threat to World Peace
iv. Freedom of Speech in a Democratic nation like India
v. Rising Religious Intolerance in a Secular Nation

6. Give the Character Sketch of:
i. Grandmother (The Portrait of a Lady)
ii. Mourad (The Summer of The Beautiful White Horse)
iii. Mrs. Dorling (The Address)

7. Brief account of all that happens when the author was on the Wavewalker along with his family and crew members.(We're Not Afraid to Die)

8. What difference did you notice between the reaction of the adults and children when faced with danger? (We're Not Afraid to Die)

9. Paste the cutouts of 10 articles which are recently been printed.

10.Write an Interview of any personality in position.

11. Answer 10 sample papers, especially (Section-A Reading Section B Grammar).

(Mathematics-041)

1 Write the solution set of the equation $x^2 + x - 2 = 0$ in roster form.

2. Write the set A = {1, 4, 9, 16, 25, . . . } in set-builder form

3. Let A = { 1, 2, 3, 4, 5, 6}, B = { 2, 4, 6, 8 }. Find A – B and B – A.

4. If A = { 3, 5, 7, 9, 11 }, B = {7, 9, 11, 13}, C = {11, 13, 15} and D = {15, 17}
find (i) $A \cap B$ (ii) $B \cap C$ (iii) $A \cap C \cap D$ (iv) $A \cap C$ (v) $B \cap D$ (vi) $A \cap (B \cup C)$ (vii) $A \cap D$ (viii) $A \cap (B \cup D)$
(ix) $(A \cap B) \cap (B \cup C)$ (x) $(A \cup D) \cap (B \cup C)$

5. State whether each of the following statement is true or false. Justify your answer.
(i) { 2, 3, 4, 5 } and { 3, 6} are disjoint sets.
(ii) { a, e, i, o, u } and { a, b, c, d }are disjoint sets.
(iii) { 2, 6, 10, 14 } and { 3, 7, 11, 15} are disjoint sets.
(iv) { 2, 6, 10 } and { 3, 7, 11} are disjoint sets.

6. (i) Show that if $A \subset B$, then $C - B \subset C - A$.
(ii) Show that for any sets A and B, $A = (A \cap B) \cup (A - B)$ and $A \cup (B - A) = (A \cup B)$
(iii) Using properties of sets, show that (i) $A \cup (A \cap B) = A$
(ii) $A \cap (A \cup B) = A$.
(iv)Show that $A \cap B = A \cap C$ need not imply B = C

7. Let A = {1, 2, 3, 4, 5, 6}. Define a relation R from A to A by
R = {(x, y) : y = x + 1 }

(i) Depict this relation using an arrow diagram. (ii) Write down the domain, co-domain and range of R

8. Let A = {1, 2, 3, 4, 6}. Let R be the relation on A defined by {(a, b): a , b ∈A, b is exactly divisible by a}. (i) Write R in roster form (ii) Find the domain of R

9. Draw the graph of the function $f: R \rightarrow R$ defined by $f(x) = x^3$, x∈R

10. Find the domain of (i)$f(x)=\sqrt{2x+8}$ (ii) $f(x)=\frac{x^2}{x+4}$

11. Find the value of $\cos 20^0.\cos 60^0.\cos 40^0.\cos 80^0$

12. A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second?

13. Find the radian measures corresponding to the following degree measures: (i) 25° (ii) –47°30′ (iii) 240° (iv) 520°

14. If cos x = – 3/ 5 , x lies in the third quadrant, find the values of other five trigonometric functions.

15. Find the value of cos (–1710°).

16. Show that tan 3 x tan 2 x tan x = tan 3x – tan 2 x – tanx

17. Find the value of tan π /8 .

18 Find the value of $\sin 18^0$

19. prove that $\cos 6x=32\cos^6 x-48\cos^4 x+18\cos^2 x-1$

20. Prove that $\cot x.\cot 2x-\cot 2x\cot 3x-\cot 3x\cot x=1$

21. The range of the function f(x)=$\frac{x}{x+2}$ is
22 If $\left(\frac{1-i}{1+i}\right)^{40}$=a+ib, then (a,b)=(1,0). State true of False
23. Prove that $\tan 20^0.\tan 40^0.\tan 80^0=\tan 60^0$
24. Find real θ such that $\frac{3+2i\sin\theta}{1-2i\sin\theta}$ is purely real.
25. Find all pairs of consecutive odd natural numbers both of which are greater than 10, such that their sum is less than 40.
26. If $A+B=45^0$, then prove that (cotA-1)(cotB-1)=2.
27. Find the conjugate of $\frac{(3-2i)(2+3i)}{(1+2i)(2-i)}$
28. Find the domain of the function f is defined by f(x)=$\sqrt{4-x}+\frac{1}{\sqrt{x^2-1}}$
29. Prove that $\frac{\sin 3x+\sin 5x+\sin 7x+\sin 9x}{\cos 3x+\cos 5x+\cos 7x+\cos 9x}$=tan6x.
30. Find the minimum value of 3cosx+4sinx+8
31. Find the value of $\sin(45^0+\theta)-\cos(45^0-\theta)$
32. Find the number of the terms in the expansion of $(1+2x+x^2)^{20}$
33. Which is larger $(1.01)^{1000000}$or10000?
34. Expand Using Binomial Theorem $(2x-3y)^8$
35. If the 17th and 18th terms in the expansion of $(2+a)^{50}$ are equal ,then the find the value of 'a'

Wishing you all the best
Submission Date :3-07-2023.

Class XI : Informatics Practices (065)

Project Work (20 marks)

Q1. Visit the website "Code.org" Complete at least one online course available on the website. Submit the completion certificate of the same.
Q2. Complete an 'Android development Course' from any website like Coursera, Edx etc. and deposit print of screenshot of the completion of course

Worksheet

Case Based Question

1. Diana tots to buy a desktop or a laptop. She wants to use this computer for her work and for watching high-quality movies. Her brother will also use this computer for playing/creating games.
(a) She wants to open multiple such applications (as mentioned above). Which of the following hardware must have suitable size to support this feature? Specify reason.

(i) ROM (ii) RAM iii) Storage iv) All of the above
(b) Diana wants to use this computer on the go. i.e.. she should be able to use it while traveling. Then out of desktop/laptop what should be her preference ?

(c) If she chooses laptop, then other than RAM CPU and Storage, what else she must consider before finalising it ? Give reason.

(i) Software (ii) Operating System (iii) Battery (iv) All of these

(d) If Diana chooses a laptop computer, would it also be having a system bus? What is system bus?

(e) Four computer terms and eight descriptions are shown below.Match the following :

Computer term	**Description**
Arithmetic and Logic Unit (ALU)	Data can be read but not altered
	Carries out operations such as addition and multiplication
Control Unit	Stores bootstrap loader and BIOS
	Fetches reach instruction in tum
Random Access Memory (RAM)	Cames out operations such as AND OR NOT
	Stores part of the operating currently in use
Read Only Memory (ROM)	Stores data currently in use
	Manages execution of each instruction

MULTIPLE CHOICE QUESTIONS

1. _____technology makes users feel as if they are truly in the virtual environment.

a. NLP b. AR c. VR d. ML

2. _____technology is able to take an existing environment and add a layer of virtual information on the top of it.

a. NLP b. AR c. VR d. ML

3. _____ is an application of artificial intelligence that provides systems the ability to automatically learn and improve from experience, after initial training.

a. NLP b. AR c. VR d. ML

4. _____ is an artificially intelligent technology that helps computers understand, interpret and manipulate human language.

a. NLP b. AR c. VR d. ML

5. _____ are programmable machines that are able to carry out actions autonomously.

a. Grids b. Clouds c. Robots d. Robotics.

6. Extremely large sets of data are _____
a. Data b. Big data c. Cloud Computers d. Database
7. Intelligent sensors that convert and process quantities digital are called _____
. Cloud b AI C Grid d. Smart
8. Distributed computing systems formed by a network of independent computer is _____ computing.
. Cloud b AI C Grid d. Smart
9. Which of these is an advantage of cloud storage?

a. The user has no control over their data
b. Many programs can be run at the same time, regardless of the processing power of your device
c. Accessible anywhere with an internet connection
d. portability
10. When a transaction has been confirmed, it means it has been approved by the network and permanently appended to the blockchain in the form of a _____
a. Block b. Confirmed c. circulating supply d. address.
11. A block chain is secured by
a. PIN Code b. 'Hash' code c. Password d. Login
12. The process of encrypting and decrypting information
a. Decentralised Application b. Block
b. Cryptocurrency d. Cryptography
13. What does the block in the blockchain consist of ?
a. Transaction data c.a timestamp
b. Hash Point d. ALL OF THESE

ASSERTIONS AND REASONS

In the following question, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as :

DIRECTIONS

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A. (c) A is true but R is false (or partly true).

(d) A is false (or partly true) but R is true.

(e) Both A and R are false or not fully true

1. Assertion. Intelligence gives us capability to think, observe, understand, learn and evolve.
Reason. Artificial Intelligence is the ability of a machine or a computer program to understand, think, learn and evolve.
2. Assertion. In order to learn, machines need initial trainings through training and test data.

Reason. Machine Learning (ML) provides systems an ability to learn and improve without the need of explicit programming after initial training with training and test data.

3. Assertion. The branch of AI (Artificial Intelligence) that deals and works with natural languages, is NLP

Reason. NLP (Natural Language Processing) helps computers understand, interpret and manipulate human language and even generate human-language responses.

4. Assertion. The Web of Things (WoT) is a framework with a vision where everyday's smart devices and objects are connected to existing Web, and perform required action and decision-making.

Reason. WoT and IoT (Internet of Things) are related.

5. Assertion. IoT (Internet of Things) is a smart sensors based technology that allows computing devices to transfer data over a network without requiring human-to-human or human-to-computer interaction.

Reason. Smart sensors are intelligent sensors that can convert the measured quantities into digital data; digitally process them, transmit them and, if needed, perform some decision-making.

6. **Assertion**. Blockchain technology is a decentralised, digitised, public ledger of online transactions, represented through a group of linked digital blocks.

Reason. Blockchain blocks are related to each other together stone the complete trail of transactions and are in a proper, linear chronological order.

My SQL
Write My sql query to create the following table and insert the records
Bank

COMPUTER SCIENCE (083)

Create a Video or Presentation on one of the following topic given below as per roll no wise:

1. Digital Footprints and their types and prevention tips Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes

2. Data protection: Intellectual Property Right (copyright, patent, trademark),
3. violation of IPR (plagiarism, copyright infringement, trademark infringement), Difference between three of them
4. Digital Property Rights, Threats to Digital Property ,Digital Property Right Protection.
5. open source softwares and licensing (Creative Commons, GPL and Apache)
6. Cyber-crime: definition, Common Cybercrimes : Cyber Trolls and Bullying, Cyber stalking, Spreading Rumors Online, Online Fraud, Information theft, Scams,illegal Downloads, Child Pronography, Reporting Cyber crime.
7. Computer Forensics, Cyber Law and IT Act & the ammendments
8. Cyber safety: safely browsing the web, identity protection while using Internet, Ways through which websites track you,Private Browsing and Anonymous Browsing.
9. Threats to Computer Security ,Viruses, Worms, Trojan Horses,spyware, adware,spamming and damages caused by them PC intrusion, Eavesdropping, Phishing and Pharming.
10. Solution to computer security threats,Solution to eavesdropping, spam,PC intrusion, Phishing and Pharming, Firewall
11. hacking, eavesdropping, phishing and fraud emails, ransomware Prevention tips for all these cyber crime
12. Confidentiality of Information, Practices to Ensure Confidentiality of Information.
13. E-waste & its management: proper disposal of used electronic gadgets,benefits of E-waste Recycling.
14. Indian Information Technology Act (IT Act)
15. Technology & Society: Economic Impacts, social impacts, Economic Benefit
16. Gender and disability issues while teaching and using computers

Project Work (20 marks)

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Q3. Complete an ‘Android development Course’ from any website like Coursera, Edx etc. and deposit print of screenshot of the completion of course

Worksheet

1. When the result of any Boolean statement is always 1 is known as _____.

a) True b) Tautology c) Fallacy d) False

2. When the result of any Boolean statement is always 0 is known as _____.

a) True b) Tautology c) Fallacy d) False

3. The logical operations can be carried out by which of the following?

a) Values and Variables b) Functions and Laws c) Operators and Operands

d) None of these

4. To denote NOT operation which of the following symbols is used?

a) bar b) dot c) plus d) asterisk

5. The dot symbol is used to represent which of the following operation?

a) AND b) OR c) NOT d) NAND

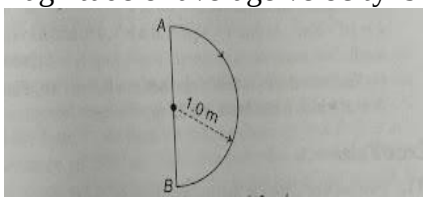
6. Which of the following are logical statements:

a) The Indian cricket team is a world champion in 2011.

b) The NOT function can be operated on more than one Boolean function.
c) Both a & b. d) None of the above
7. Which of the following gate is also known as an inverter
a) AND b) OR c) NOT d) NAND
8. Which of the following gate returns a true result if both inputs are true otherwise false.
a) AND b) OR c) NOT d) None of the above
9. Which gate can be written like A & B
a) AND b) OR c) NOT d) XOR
10. Which gate returns true if both inputs are similar otherwise false.
a) NAND b) NOR c) XOR d) None of the above
9. Answer the following:
i) Convert: (111111110101110.1101101111)2= (?)16
ii) (100111101)2 = (?)8
iii) (127)10 = (?)2
iv) (29.75)10 = (.....)2 (v) (A4B)16 = (.....)10
(vi) (1234)8 = (.....)16
(vii)(10011111)2 = (?)16 = (?)10 = (?)8
10. The boolean expression for the following:
11. Draw a flowchart to print the odd numbers between 1 to 50
12. Write an algorithm and draw a flowchart to determine if a student passed the exam or not. Note there are 4 subjects and passing average is 50 or more.

(**PHYSICS-042**)

1. One light year is equal to
   (a) 9.46×10^{15}m (b) 8.36×10^{17}m (c) 9.89×10^{10}m (d) none of above
2. The displacement (in metre) of a particle moving along x –axis is given by $X = 18t + 5t^2$ .Calculate the instantaneous velocity at t=2sec.
3. A bus decreases its speed from 80 km h^{-1} to 60 km h^{-1} in 5 s. Find the acceleration of the bus.
4. In 1 second a particle goes from A to B moving in a semicircle shown in figure. The magnitude of average velocity is



5. A vehicle travels half the distance L with speed v_1 and the other half with speed v_2, then its average speed is
6. Write SI Unit of Surface Tension and surface energy.
7. Define the term vector and scalar quantity .Is thrust a scalar or vector quantity?
8. What is the derivative of xsinx w.r.t x
9. Find the value of 1 light year in Giga meter.
10. Name the device used for measuring the mass of atoms and molecules
11. Check whether the given equation is dimensionally correct $1/2mv^2 = mgh$
12. Convert 1N into dynes.

13. Write three pairs of physical quantities ,which have same dimensional Formula.

14. What are the dimensions of 'a' and 'b' in the relation : F=a+ bx ,where F is force and (x) is distance?
15. A train 100m long is moving with a speed of 60km/h. In what time shall it cross a bridge of 1km long?
16. A person travels along a road for the first half with a velocity v_1 and the second half with velocity v_2.What is the mean velocity of the person?
17. The displacement 'x' of a particle varies with time 't' as $x=4t^2-15t+25$.
    (i)Find the position,velocity and acceleration of the particle at t=0
    (ii)Can we call the motion of the particle as one with uniform acceleration?
18. Obtain equation of motion for constant acceleration using method of calculus.
19. (i)Two forces 5N towards East and -7N towards South acts on a particle .Find the resultant force.
    (ii)The angle between vectors A and B is 60^0.What is the ratio of **A.B**= |**AxB**| ?
    (iii)If **A.B**=|**AxB**| , find angle between **A** and **B.**
20. (i) A cricket ball is thrown at a speed of 28m/s in a direction 30^0 above the horizontal. Calculate (a)the maximum height(b)time taken by ball to hit the ground(c)range(R)
    (ii)Prove that the path of projectile is a parabolic

CHEMISTRY

1. Numericals related to Structure of Atom Photoelectric Effect,Debroglie equation,Heisenberg to be solvedin copy
2. Electronic Configuration of 1 to 30 Element is to be illustrate in Most creative way….(quiling ,paper craft ,Beads)
3. Prepare 3 cube of 15cm length using white ivory sheet.
4. NCERT exercise of chapter 1 and 2 to be practiced in copy.
5. Learn all the highlighted terms of four chapters done from NCERT.

BIOLOGY

1. Complete the practical file. Content for the same will be shared in bio group.
2. PT-1 syllabus.
   Unit-Cell(all 3 chapters)
   Unit-Morphology of flowering plants
3. Learn all the highlighted terms of four chapters done from NCERT.
4. Do read the MCQ and Assertion reasoning questions sent in bio group.

PHYSICAL EDUCATION

Prepare Physical Education File for practical (Board Exam)

Wishing you All the Best.