PECTAA
Transformation, Innovation and Excellence

Director (C & C)

PUNJAB EDUCATION, CURRICULUM, TRAINING AND ASSESSMENT AUTHORITY

21- E-II, Gulberg-III, Lahore
No: PECTAA/C&C Unit/2025/326

Dated: 24.10.2025

NOTIFICATION

In accordance with the approval granted by the Academics Committee of the Punjab Education, Curriculum, Training and Assessment Authority in its 7th meeting held on 23.10.2025, the Pairing Schemes and Model Papers of Matric-Tech subjects for Grade-9 **(Annex-A)** are hereby notified for implementation across Punjab.

Director (Curriculum & Compliance)

CC:

1. PSO to the Minister, Government of the Punjab, School Education Department
2. PS to the Vice Chairperson, PECTAA / Parliamentary Secretary, School Education
3. PS to the Chairperson, Chief Minister Task Force for Examination & Assessment
4. PS to the Secretary, Government of the Punjab, School Education Department
5. PS to the Secretary, Government of the Punjab, Higher Education Department
6. PS to the Special Secretary, Government of the Punjab, SED
7. PS to the Special Secretary, Government of the Punjab, South Punjab, Multan
8. Staff Officer to the Chief Executive Officer, PECTAA
9. PS to all Managing Directors, PECTAA
10. PA to the Secretary, Punjab Boards Committee of Chairpersons (PBCC)
11. PS to the Chairperson, BISE (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad, Sahiwal, Multan, Dera Ghazi Khan and Bahawalpur)
12. PA to all Directors, PECTAA
13. PS to the Programme Director, PMIU
14. PS to Managing Director, Punjab Education Foundation
15. PS to the Chief Executive Officer, Punjab Education Initiatives Management Authority
16. PS to the Managing Director, Punjab Daanish Schools & Centres of Excellence Authority
17. PS to the DPI (Secondary Education), Punjab
18. PS to all Chief Executive Officers (Education), District Education Authorities, Punjab
19. Director (IT), PECTAA for uploading the Notification, Pairing Schemes and Model Papers of Matric-Tech subjects for Grade-9 on the website of PECTAA.
20. Office File

Punjab Education, Curriculum, Training & Assessment Authority

INSTRUCTIONS FOR PREPARATION OF EXAM PAPER OF INFORMATION & COMMUNICATION TECHNOLOGIES (ICT) FOR GRADE-9

ESSENTIAL INSTRUCTIONS FOR PAPER SETTERS

The paper of Information & Communication Technologies (ICT) for Grade-9 will consist of 40 marks.
Duration of the paper will be 2 hours.
(Objective Type = 15 minutes + Subjective Type = 1:45 hours)
Objective Type = 10 marks + Subjective Type = 30 marks.
The paper will be made as per following details:

Part-I: **Objective:**	**Q-1:** 10 Multiple Choice Questions (MCQs) will be developed from the entire content of the text book. Two MCQs will be asked from each of Chapters 1, 2, 4, and 6, while one MCQ will be asked from each of Chapters 3 and 5.	1 × 10 = 10
Part-II: **Subjective:**	This section will contain two short answer questions. Each short answer question will be asked from the exercises of the textbook. The detail is as follows:	
	Q-2: 4 short answer questions have to be answered out of 6. The detail is as follows: • Two short answer questions will be asked from each of chapter No. 1, 2 and 3.	2 × 4 = 8
	Q-3: 4 short answer questions have to be answered out of 6. The detail is as follows: • Two short answer questions will be asked from each of chapter No. 4, 5 and 6.	2 × 4 = 8
Part-III: **Subjective:**	This section will contain three detailed questions and students have to attempt two questions carrying 7 marks each. Each detailed question should be asked form the exercises of the textbook. The detail is as follows: **Q-4:** One detailed question will be asked from Chapter 2. **Q-5:** One detailed question will be asked from Chapter 4. **Q-6:** One detailed question will be asked either from Chapter 5 or Chapter 6.	2 × 7 = 14

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MODEL PAPER OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) FOR GRADE-9

OBJECTIVE (PART-I)

Max. Marks: 10 **Time Allowed: 15 mins**

Multiple Choice Questions (MCQ)

Q#1: Choose the correct option: **(1×10=10)**

i. What is the default file extension for a Microsoft Word Document?

a. .pptx b. .txt c. .docx d. .xlsx

ii. CTRL+ Z in word and PowerPoint is used for:

a. Save b. Copy c. Redo d. Undo

iii. In an Arduino sketch, which function runs only once when the program starts?

a. Setup() b. loop() c. run() d. start()

iv. What is the multiplier for the color "Green" in the third band?

a. 10 b. 100 c. 100,000 d. 1,000,000

v. Which Canva template category is best for designing educational or event announcements to put on walls?

a. Whiteboard b. Video c. Poster d. Website

vi. Which language provides the structure for a webpage?

a. CSS b. JavaScript c. HTML d. Python

vii. Which tag is used to create a hyperlink in an HTML document?

a. <link> b. <h> c. <a> d. <href>

viii. What is purpose of using a 220-ohm resister in LED circuit?

a. Increase Brightness b. Protect LED from extensive Current
c. Change LED color d. Make the circuit faster

ix. Which AI tool is commonly used for grammar and spelling correction?

a. ChatGPT b. Grammarly c. QuillBot d. DALL.E

x. Which AI tool can generate image from text description?

a. Canva b. DALL.E c. QuillBot d. Zapier

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MODEL PAPER OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) FOR GRADE-9

SUBJECTIVE

Max. Marks: 30 **Time Allowed: 1:45 hrs**

Subjective (PART-II)

Q#2: Write the answers to any four short questions. **(2×4=8)**

i. Differentiate between header and footer in MS-Word.

ii. Define two ways to save a PowerPoint presentation.

iii. What is the function of a resistor in an Arduino circuit?

iv. What does the function pinMode(13, OUTPUT); do in an Arduino program?

v. List three types of designs you can create with Canva.

vi. Name two key design basics you should follow when making a poster.

Q#3: Write the answers to any four short questions. **(2×4=8)**

i. How can CSS classes be used to style multiple elements at once?

ii. Write an HTML tag to display an image from a file named “photo.jpg”?

iii. How can malware be prevented?

iv. What is port forwarding?

v. How does AI help in Speech-to-text generation?

vi. How is AI used in the retail industry?

PART-III

Attempt any two long questions.

Q#4: What do you mean by Jumper Wires? Explain the different types of Jumper Wires. **(07)**

Q#5: Explain the steps to setup an online store on Daraz to sell handmade keychains. Include at least four steps. **(07)**

Q#6: What are the common software troubleshooting methods used when a computer fails to start properly? **(07)**

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Punjab Education, Curriculum, Training & Assessment Authority

Pairing Scheme / Instructions for Preparation of Exam Paper of Physics-Tech for Class-9

The paper of Physics-Tech for Grade-9 will consist of 40 marks.
Duration of the paper will be 2 hours.

(Objective Type = 15 minutes + Subjective Type = 1:45 hours)

Objective Type = 10 marks + Subjective Type = 30 marks.

The paper will be made as per following details:

Part-I: Objective:	**Q-1:** 10 Multiple Choice Questions (MCQs) will be developed from the entire content of the textbook. Two MCQs will be asked from chapters 4 and 6 each, and one MCQ will be asked from chapters 1, 2, 3, 5, 7 and 8 each.	**(1 × 10) = 10**
Part-II: Subjective:	This section will contain two short answer questions. Each short answer question will be asked from the exercises of the textbook. The detail is as follows: **Q-2:** Four (4) short answer questions have to be answered out of 6. The detail is as follows: • Two (02) short answer questions should be asked from chapters 3 and 4 each and one short answer question will be asked from chapters 1 and 2 each.	**(2 × 4) = 8**
	Q-3: Four (4) short answer questions have to be answered out of 6. The detail is as follows: • Two (2) short answer questions should be asked from chapters 5 and 6 each and one short answer question will be asked chapters 7 and 8 each.	**(2 × 4) = 8**
Part-III: Subjective:	This section will contain three detailed questions and students have to attempt two questions carrying 7 marks each. Each detailed question will be asked form the exercises of the textbook. The detail is as follows: **Q-4:** One detailed question will be asked from chapters 1, 2 and 3 each. **Q-5:** One detailed question will be asked from chapters 4 and 5 each. **Q-6:** One detailed question will be asked from chapters 6, 7 and 8 each.	**(2 × 7) = 14**

Note:	In part-III, each question will consist of two parts. Part (a) may be asked form any chapter. Part (b) will be asked from different chapters (not from the same chapter as Part (a). Part (a) will carry 3 marks while Part (b) will carry 4 marks.

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MODEL PAPER OF PHYSICS-TECH FOR GRADE-9

Objective (Part-I)

کل نمبر:10 وقت:15منٹ

Max. Marks: 10 **Time allowed: 15 Mins.**

نوٹ: ہر سوال کے چار ممکنہ جوابات A،B،C اور D دیے گئے ہیں۔ جو انتخاب آپ کے خیال میں درست ہے، اس سوال کے سامنے والے دائرے کو مار کر یا پین کی سیاہی سے بھریں۔ دو یا دو سے زیادہ دائروں کو کاٹنے یا بھرنے کی صورت میں جواب غلط تصوّر ہو گا۔

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with marker or pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

(i) درج ذیل میں سے کون سی مقدار غیر طبیعی مقدار ہے؟

(i) Which one is a non-physical quantity?

(a) Distance فاصلہ (b) Density ڈینسٹی

(c) Colour رنگ (d) Temperature ٹمپریچر

(ii) ایک گیند کسی ٹاور پر سے گرایا گیا ہے۔ پہلے ایک سیکنڈ میں اس کا طے کردہ فاصلہ ہو گا:

(ii) A ball is dropped from the top of a tower, the distance covered by it in the first second is:

(a) 5 m (b) 10 m

(c) 50 m (d) 100 m

(iii) جب ہم ایک پتھر کو پاؤں سے ٹھوکر مارتے ہیں تو ہمیں چوٹ لگتی ہے۔ اس کی وجہ ہے:

(iii) When we kick a stone, we get hurt. This is due to:

(a) Inertia انرشیا (b) Velocity ولاسٹی

(c) Momentum مومینٹم (d) Reaction ردِّعمل

(iv) ایک ذرّے پر بیک وقت 3 اور 4 نیوٹن کی دو فورسز لگ رہی ہیں۔ ذرّے پر حاصل فورس ہو گی:

(iv) A particle is simultaneously acted upon by two forces of 4 and 3 newtons. The net force on the particle is:

(a) 1 N (b) between 1 N and 7 N

(c) 5 N (d) 7 N

(v) ایک سلنڈر اپنے گول پیندے کے بل پڑا ہوا ہے۔ یہ:

(v) A cylinder resting on its circular base is in:

(a) Stable equilibrium قیام پذیر توازن

(b) Unstable equilibrium غیر قیام پذیر توازن

(c) Neutral equilibrium نیوٹرل توازن

(d) None of these ان میں سے کوئی بھی نہیں

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(vi) کسی جسم کا مومینٹم اگر دوگنا ہو جائے تو اس کی کائی نیٹک انرجی کتنی ہو گی؟

(vi) If the magnitude of momentum of an object is doubled; the kinetic energy of the object will:

(a) double دوگنی (b) increase to four times چار گنا ہو جائے گی

(c) reduce to one-half آدھی رہ جائے گی (d) remain the same اتنی ہی رہ جائے گی

(vii) 2 اور 3 مربع میٹر ایریا کی دو دھاتی پلیٹیں ایک مائع کے اندر ایک جتنی گہرائی میں رکھی گئی ہیں۔ دونوں پلیٹوں پر پریشر میں نسبت ہو گی:

(vii) Two metal plates of area 2 and 3 square metre are placed in a liquid at the same depth. The ratio of pressures on the two plates is:

(a) 1:1 (b) $\sqrt{2}$: $\sqrt{3}$

(c) 2:3 (d) 4:9

(viii) فضا ایک مستطیلی سطح پر کتنی فورس ڈالتی ہے، اگر مستطیل کی لمبائی 50 سینٹی میٹر اور چوڑائی 40 سینٹی میٹر ہے، جبکہ فضائی پریشر 100 kPa ہے۔

(viii) What is the force exerted by the atmosphere on a rectangular-shaped surface of length 50 cm and breadth 40 cm? The atmospheric pressure is 100 kPa.

(a) 20 kN (b) 100 kN

(c) 200 kN (d) 500 kN

(ix) کون سا ٹمپریچر سیلسیئس اور فارن ہائیٹ پر ایک ہی ہوتا ہے؟

(ix) The temperature which has the same value on Celsius and Fahrenheit scale is:

(a) -40 (b) +40

(c) +45 (d) -45

(x) کسی مٹیریل کو میگنیٹ بنانے کا ایک عام طریقہ ہے:

(x) A common method used to magnetise a material is:

(a) stroking رگڑنا

(b) hitting ضرب لگانا

(c) heating گرم کرنا

(d) placing inside a solenoid having AC ایسی سولی نائڈ کے اندر رکھنا جس میں سے اے سی کرنٹ گزر رہا ہو

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Subjective Type
(Part-II)

کل نمبر:30 وقت:1:45 گھنٹے

Time allowed: 1:45 Hours **Max. Marks: 30**

2. کوئی سے چار(04)سوالات کے مختصر جوابات لکھیے۔

Q-2. Write short answers to any four (04) questions. (2x4=8)

(i) کسی مقدار کی پیمائش کے لیے ایک یونٹ مقرر کرنا کیوں ضروری ہے؟

(i) Why do we need a standard unit for measurement?

(ii) سکیلر اور ویکٹر مقداروں کی پانچ پانچ مثالیں دیں۔

(ii) Give 5 examples each for scalar and vector quantities?

(iii) کسی شے کی ٹرمینل ولاسٹی کی تعریف کریں۔

(iii) Define terminal velocity of an object.

(iv) تصوّر کریں کہ جب ہر شے میں فرکشن ختم ہو جائے تو روز مرّہ زندگی کا منظر کیا ہو سکتا ہے؟

(iv) Imagine that if friction vanishes suddenly from everything, then what could be the scenario of daily life activities?

(v) کسی فورس کے عمل کرنے والی لائن کیا ہوتی ہے؟

(v) What is the line of action of a force?

(vi) ایک کار دو مختلف ریڈیئس کے موڑوں سے ایک جتنی سپیڈ سے گزرتی ہے۔ کس نصف قطر والے موڑ میں اس پر زیادہ سینٹری پیٹل فورس لگتی ہے؟ اپنے جواب کو ثابت کریں۔

(vi) A car travels at the same speed around two curves with different radii. For which radius the car experiences more centripetal force? Prove your answer.

3. کوئی سے چار(04)سوالات کے مختصر جوابات لکھیے۔

Q-3. Write short answers to any four (04) questions. (2x4=8)

(i) دوڑتی ہوئی خاتون سیڑھی پر چڑھتی ہے۔ اس دوران وہ 4500 J گریویٹیشنل انرجی حاصل کر لیتی ہے۔ اگر وہ اس سیڑھی پر پہلے سے دوگنا سپیڈ سے دوڑتی ہوئی چڑھے تو وہ کتنی پوٹینشل انرجی حاصل کرے گی؟

(i) A woman runs up a flight of stairs. The gain in her gravitational potential energy is 4500 J. If she runs up the same stairs with twice the speed, what will be her gain in potential energy.

(ii) کیا کسی جسم کی کائی نیٹک انرجی منفی ہو سکتی ہے؟

(ii) Can the kinetic energy of a body ever be negative?

(iii) مائع کے پریشر اور مائع کی گہرائی کے درمیان کیا تعلق ہے؟

(iii) What is the relationship between liquid pressure and the depth of the liquid?

(iv) سپرنگ لوہے کی بجائے سٹیل سے بنائے جاتے ہیں۔ کیوں؟

(iv) Springs are made of steel instead of iron. Why?

(v) کیا وجوہات ہیں کہ گیسیں نہ تو کوئی خاص والیوم رکھتی ہیں اور نہ خاص شکل؟

(v) What is the reasons that gases have neither a fixed volume nor a fixed shape?

(vi) میگنیٹک لائنز آف فورسز کیا ہوتی ہیں؟

(vi) What are magnetic lines of force?

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(Part-III)

نوٹ: کوئی سے دو(02)سوالات کے جوابات لکھیے۔

Note: Attempt any two (02) questions.

4. (الف) SI میں ماخوذ یونٹس کی مثالیں دیں۔ان کو بنیادی یونٹس سے کیسے اخذ کیا جاتا ہے؟وضاحت کریں۔ (3)

Q-4. (a) Give three examples of derived units in SI. How are they derived from base units? Describe briefly.

(ب) لوہے کا ایک گولا کسی ٹاور پر سے گرایا گیا ہے۔یہ زمین پر 4 سیکنڈ میں پہنچتا ہے۔ **(4)**

(i) ٹاور کی بلندی معلوم کریں۔ (ii) گولے کی زمین سے ٹکراتے ہوئے ولاسٹی معلوم کیجیے۔

(b) An iron bob is dropped from the top of a tower. It reaches the ground in 4 seconds. Find: (i) the height of the tower. (ii) the velocity of the ball as it strikes the ground.

5. (الف) توازن کی دو شرائط بیان کریں اور ان کی وضاحت کریں۔ (3)

Q-5. (a) State and explain two conditions of equilibrium.

(ب) 10 کلو گرام کا ایک باکس ایک ریمپ یا سلوپ پر 80 نیوٹن کی فورس لگا کر 15 میٹر تک دھکیلا جاتا ہے۔اگر باکس اس دوران 5 میٹر کی بلندی حاصل کرے تو اس سسٹم کی ایفی شینسی کیا ہو گی؟ (4)

(b) A box of mass 10 kg is pushed up along a ramp 15 m long with a force of 80 N. If the box rises up a height of 5 m, what is the efficiency of the system?

6. (الف) ٹمپریچر کیا ہے؟یہ کیسے ماپا جاتا ہے؟مختصر طور پر شیشے میں مرکری تھرمامیٹر کو بیان کریں۔ (3)

Q-6. (a) What is temperature? How is it measured? Describe briefly a mercury in glass thermometer.

(ب) ایک ہائڈرالک پریس کے چھوٹے اور بڑے پسٹنوں کے عرضی رقبے بالترتیب $10\ cm^2$ اور $100\ cm^2$ ہیں۔چھوٹے پسٹن پر کتنی فورس لگائی جائے کہ 4000 N وزنی کار کو اُٹھایا جا سکے؟ (4)

(b) The area of cross-section of the small and large pistons of a hydraulic press is 10 cm^2 and 100 cm^2 respectively. What force should be exerted on the small piston in order to lift a car of weight 4000 N.

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Pairing Scheme / Instructions for Preparation of Exam Paper of Chemistry-Tech for Grade-9

The paper of Chemistry-Tech for Grade-9 will consist of 40 marks.

Duration of the paper will be 2 hours.

(Objective Type = 15 minutes + Subjective Type = 1:45 hours)

Objective Type = 10 marks + Subjective Type = 30 marks.

The paper will be made as per following details:

<table>
<tr><td>Part-I:
Objective:</td><td>Q-1: 10 Multiple Choice Questions, one each from Chapter 1 to 10.</td><td>1 × 10 = 10</td></tr>
<tr><td rowspan="2">Part-II:
Subjective:</td><td>Q-2: 4 short answer questions have to be answered out of 6. The detail is as follows:
<table>
<tr><td>Chapter</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>No. of Short Questions per Chapter</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
</table></td><td>2 × 4 = 8</td></tr>
<tr><td>Q-3: 4 short answer questions have to be answered out of 6. The detail is as follows:
<table>
<tr><td>Chapter</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr>
<tr><td>No. of Short Questions per Chapter</td><td>1</td><td>1</td><td>1</td><td>2</td><td>1</td></tr>
</table></td><td>2 × 4 = 8</td></tr>
<tr><td>Part-III:
Subjective:</td><td>This section will contain three questions bifurcated in two-part a & b (carrying 4 & 3 marks respectively) and students have to attempt 2 questions The detail is as follows:
Q-6:
<table>
<tr><td>Chapter</td><td>1</td><td>2</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
Q-7:
<table>
<tr><td>Chapter</td><td>3</td><td>7</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
Q-8:
<table>
<tr><td>Chapter</td><td>9</td><td>11</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table></td><td>2 × 7 = 14</td></tr>
</table>

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MODEL PAPER OF MATRIC TECH CHEMISTRY-TECH FOR GRADE-9

Objective (Part-I)

Time Allowed: 15 Min. **Max. Marks: 10**

نوٹ: ہر سوال کے چار ممکنہ جوابات A، B، C اور D دیے گئے ہیں۔ جو انتخاب آپ کے خیال میں درست ہے، اس سوال کے سامنے والے دائرے کو مار کر یا پین کی سیاہی سے بھریں۔ دو یا دو سے زیادہ دائروں کو کاٹنے یا بھرنے کی صورت میں جواب غلط تصوّر ہو گا۔

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle with marker or pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

(i) کون سا پولیمر انسان کا بنایا ہوا ہے؟

(i) The man-made polymer is:

(a) Starch سٹارچ (b) Polystyrene پولی سٹائرین

(c) Protein پروٹین (d) Cellulose سیلولوز

(ii) ایلیمنٹس کے تیسرے شیل میں زیادہ سے زیادہ کتنے الیکٹرونز موجود ہو سکتے ہیں؟

(ii) How many electrons can be accommodated at the most in the third shell of the elements?

(a) 8 (b) 18

(c) 10 (d) 32

(iii) کس آئیونک کمپاؤنڈ کا میلٹنگ پوائنٹ سب سے زیادہ ہو گا؟

(iii) Which ionic compound has the highest melting point?

(a) NaCl (b) KCl

(c) LiCl (d) RbCl

(iv) ایلومینیم آکسائیڈ (Al_2O_3) کے 204 گرام میں Al کا ماس کتنا ہو گا؟

(iv) What is the mass of Al in 204 g of aluminium oxide, Al_2O_3?

(a) 26 g (b) 27 g

(c) 54 g (d) 108 g

(v) کون سا ہائیڈروجن ہیلائڈ اینڈوتھرمک ری ایکشن کے نتیجے میں بنتا ہے؟

(v) Formation of which hydrogen halide from the elements is an endothermic reaction?

(a) HCl (b) HF

(c) HBr (d) HI

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(vi) ہوا میں موجود کونسی گیسیں بجلی چمکنے سے ری ایکشن کرتی ہیں؟

(vi) Predict which components of the atmosphere react in the presence of lightening?

(a) N_2 and H_2O (b) O_2 and H_2O

(c) CO_2 and O_2 (d) N_2 and O_2

(vii) کیلشیم ہائیڈرو آکسائیڈ کو پانی میں حل کریں تو کتنے ہائیڈرو آکسائیڈ آئنز بناتا ہے؟

(vii) How many hydroxide ions, calcium hydroxide will release in water?

(a) 1 (b) 2

(c) 3 (d) 0

(viii) نائٹروجن کا ایٹم اپنے بیرونی شیل میں کتنے الیکٹرونز حاصل کر سکتا ہے؟

How many electrons can nitrogen accept in its outermost shell?

(a) 2 (b) 3

(c) 4 (d) 5

(ix) کون سا ہیلوجن ایسڈ عام درجہ حرارت پر ان سٹیبل ہے؟

(ix) Which halogen acid is unstable at room temperature?

(a) HCI (b) HF

(c) HBr (d) HI

(x) کون سی گیسیں گرین ہاؤس ایفیکٹ کا موجب بنتی ہیں؟

(x) Which gases are responsible for greenhouse effect?

(a) SO_2, NO_2 (b) NO_2, CO

(c) CO_2, CH_4 (d) O_2, N_2

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Subjective Type (Part-II)

Time allowed: 1.45 Hrs. **Max. Marks: 30**

Q. 2: Write short answers to any four (04) questions: **(2 × 4 = 8)**

کوئی سے چار (4) سوالات کے مختصر جوابات لکھیے:

(i) گریفائٹ کیوں اہم ہے؟

(i) What is the importance of graphite?

(ii) ایک ایٹم کس طرح انرجی جذب اور خارج کرتا ہے؟

(ii) How can an atom absorb and evolve energy?

(iii) HF ایک مائع ہے اور HCl ایک گیس، ایسا کیوں ہے؟

(iii) Why HF is a liquid while HCl is a gas?

(iv) 1.5 گرام پانی میں کتنے مالیکیولز ہوں گے؟

(iv) How many molecules are present in 1.5 g H_2O?

(v) بانڈ کا ٹوٹنا ایک اینڈوتھرمک عمل کیوں ہے؟

(v) Why is breaking of a bond an endothermic process?

(vi) ایتھائل ایسیٹیٹ کو کمرشل پیمانے پر کیسے تیار کرتے ہیں؟

(vi) How ethyl acetate is prepared commercially?

Q. 3: Write short answers to any four (04) questions: **(2 × 4 = 8)**

کوئی سے چار (4) سوالات کے مختصر جوابات لکھیے:

(i) کیلشیم میٹل کس طرح سے سلفیورک ایسڈ سے ری ایکٹ کرتی ہے؟

(i) How does calcium metal react with dilute H_2SO_4?

(ii) لفظ پیریاڈک کی کیا اہمیت ہے؟

(ii) What is the significance of the word periodic?

(iii) آئیوڈین عام درجہ حرارت پر ٹھوس حالت میں کیوں پائی جاتی ہے؟

(iii) Why does iodine exist in the solid state at room temperature?

(iv) ایسڈ رین جنگلات پر کیسے اثر انداز ہوتی ہے؟

(iv) How does acid rain affect forest?

(v) آرگینک اور ان آرگینک کمپاؤنڈز کا موازنہ کریں۔

(v) Differentiate between an organic and inorganic compound.

(vi) ماحولیاتی تعلیم کا سب سے اہم مقصد کیا ہے؟

(vi) What is the main objective of environmental education?

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Subjective (Part-III)

نوٹ: کوئی سے دو سوالات کے جوابات لکھیے۔

Note: Attempt any two questions.

Q. 4: (a) Define solubility of a solute. How does the solubility of solute change with the increase in temperature? **(4)**

(الف) کسی سولیوٹ کی سولوبیلیٹی کی تعریف کریں۔ درجہ حرارت بڑھانے سے مختلف اشیاء کی سولوبیلٹی پر کیا فرق پڑتا ہے؟

(b) Describe how electron was discovered. **(3)**

(ب) الیکٹران کیسے دریافت ہوا تفصیل سے لکھیں۔

Q. 5: (a) Compare the properties of ionic and covalent compounds (any four). **(4)**

(الف) آیونک اور کوویلینٹ کمپاونڈز کی خصوصیات کا تقابلی جائزہ لیں (کوئی چار)۔

(b) Differentiate between an acid and its conjugate base. **(3)**

(ب) ایسڈز اور اس کے کانجوگیٹ بیس میں کیا فرق ہے؟

Q. 6: (a) Compare the properties of metals and non- metals (any four). **(4)**

(الف) میٹلز اور نان میٹلز کی خصوصیات کا موازنہ کریں (کوئی چار)۔

(b) Describe the importance of organic compounds in daily life. **(3)**

(ب) روزمرہ زندگی میں آرگینیک کمپاؤنڈز کی اہمیت کی وضاحت کریں۔

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Pairing Scheme / Instructions for Preparation of Exam Paper of Computer Science & Entrepreneurship-Tech for Class-9

The paper of Computer Science & Entrepreneurship-Tech for Grade-9 will consist of 40 marks.
Duration of the paper will be 2 hours.
(Objective Type = 15 minutes + Subjective Type = 1:45 hours)
Objective Type = 10 marks + Subjective Type = 30 marks.
The paper will be made as per following details:

Part-I: **Objective:**	**Q-1:** 10 Multiple Choice Questions (MCQs) will be developed from the entire content of the textbook. One MCQ will be asked from all chapters from chapter No. 1 to 10.	**1×10= 10**
Part-II: **Subjective:**	This section will contain three short answer questions. Each short answer question will be asked from the exercises of the textbook. The detail is as follows:	
	Q-2: 4 short answer questions have to be answered out of 6. The detail is as follows: • One short answer question will be asked each from chapter No.1, 2, 4 and 6. • Two short answer questions should be asked from chapter No. 3.	**2 × 4 = 8**
	Q-3: 4 short answer questions have to be answered out of 6. The detail is as follows: • Two short answer questions will be asked from chapter No. 5. • One short answer question will be asked each from chapter No. 7, 8, 9 and 10.	**2 × 4 = 8**
Part-III: **Subjective:**	This section will contain three detailed questions and students have to attempt two questions carrying 7 marks each. Each detailed question will be asked form the exercises of the textbook. The detail is as follows: **Q-5:** One detailed question will be asked from Chapter No 5. **Q-6:** One detailed question will be asked from Chapter No 7. **Q-7:** One detailed question will be asked either from chapter 2 or chapter 10.	**2 × 7=14**

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MODEL PAPER OF COMPUTER SCIENCE AND ENTREPRENEURSHIP-TECH FOR GRADE-9

Objective (Part-I)

Question # 1 **Time Allowed: 15 mins**

Multiple Choice Questions (MCQ)

Choose the correct option **(1x10 = 10)**

i. Which of the following transport's data inside a computer among different Component?

a) Control Unit b) System Bus
c) Memory d) Processor

ii. In the single precision, how many bits are used for the exponent?

a) 23 bits b) 8 bits c) 11 bits d) 52 bits

iii. Which logic gate output true only if both inputs are true??

a) OR gate b) AND gate c) XOR gate d) NOT gate

iv. Which of the following is an example of application software?

a) Microsoft word b) BIOS
c) Disk cleanup d) Device Manager

v. Which network topology connects all devices to central hub?

a) Ring b) Mesh c) Bus d) Star

vi. Which term refers to the process of ignoring the detail to focus on the main idea?

a) Decomposition b) Pattern Recognition
c) Abstraction d) Algorithm Design

vii. What type of data is used to Categorize items without implying any order?

a) Ordinal Data b) Discrete Data
c) Nominal Data d) Continuous Data.

viii. Which of these is a security concern in IOT deployment?

a) Device Vulnerability b) Data privacy
c) Lack of Standardization d) All

ix. What should you do if you email from an unknown render an email asking for personal information?

a) Provide the information requested
b) Forward the email to your friends
c) Ignore or delete the email
d) Open the email and click on any links

x. What is the Frist step in the design thinking process?

a) Prototyping b) Testing c) Empathizing d) Defining

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Subjective (Part-II)

Total Marks: 30 **Time Allowed: 1:45 hrs**

Q # 2 Write Short answers to any four (4) questions. (2x4=8)

i. Define Natural Science.

ii. Convert 1010011010 to Octal number system.

iii. What do you know about Analog signal?

iv. Simplify the expression (A+B). ($\overline{A}$+B).

v. What do you know about application Software?

vi. What is algorithm?

Q # 3 Write Short answers to any four (4) questions. (2x4=8)

i. What are the basic components of data communication?

ii. Define router.

iii. Define qualitative data.

iv. Define Role-based systems with example.

v. Define Cloud Services.

vi. Define role of digital Technologies.

Subjective (Part-III)

(2x7=14)

Q # 4 What is network topology, explain bus and star topology?

Q # 5 What is data collection, Explain different method of data Collection?

Q # 6 What is E-commerce, also explain E-commerce platforms?

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