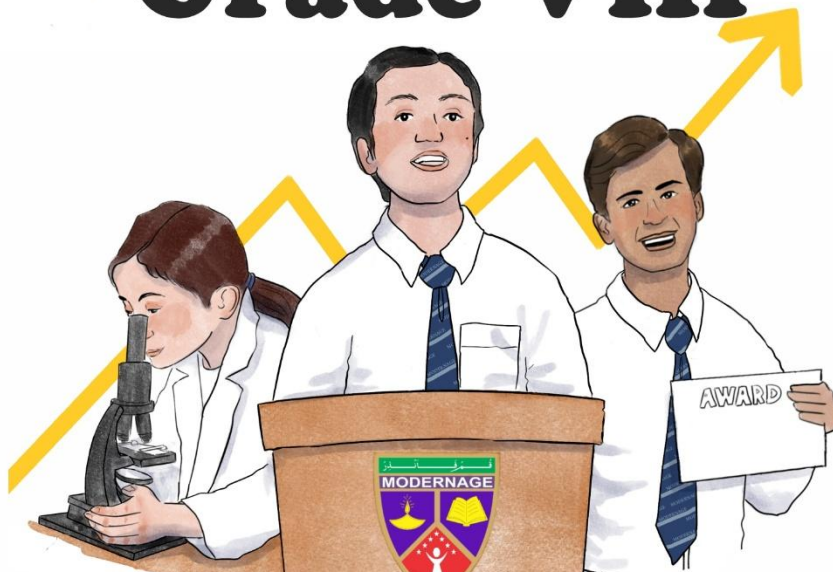


MODERNAGE Public School & College, Pakistan

A Place to Flourish, Thrive & Shine

Grade VIII



Summer Homework

Modernage Public School & College, Pakistan
Homework for Summer Break
Grade VIII (BISE ATD) -Session 2026-27

Dear Parents and Young Learners,

As we wrap up an incredible first term filled with discovery and growth, we celebrate the curiosity, creativity, and kindness our Grade VIII students have shown. Summer break is a magical time to relax, explore, and let newfound knowledge blossom. To keep young minds engaged and excited about learning, we've crafted special summer assignments that blend fun with foundational skills, setting the stage for a brilliant Term II ahead!

Purpose of the Homework

- To reinforce core concepts from previous grades and introduce selected themes from the Grade VI curriculum.
- To nurture independent learning, critical thinking, and curiosity.
- To help students develop time management and self-discipline through structured yet enjoyable tasks.

What to Expect

- Engaging and purposeful assignments across major subjects designed to be both challenging and fun.
- Activities that promote reading, exploration, and hands-on learning.
- A chance for students to reflect, discover, and prepare for the exciting year ahead.

Parental Support Matters

We warmly invite parents to become partners in their child's learning. Encourage your child to:

- Maintain a balanced daily routine (study, rest, play, and quality family time).
- Keep a summer reading journal to fuel imagination and build language skills.
- Celebrate small milestones with words of encouragement and appreciation.

📅 Summer Vacation Schedule

- **Summer Vacations are starting from Thursday 25th June to Sunday 2nd August 2026.**
- **School will reopen on Monday 3rd August 2026.**

📢 Homework Submission

All summer homework must be **submitted on the reopening day, Monday, 28th July 2025.**

As we step into this summer break, we wish our students a **joyful, safe, and enriching holiday** filled with laughter, learning, and memorable moments. Let this break refresh their minds and hearts, and prepare them for a brilliant start to the new academic session.

➡️ Homework details can be found on www.maps.edu.pk, the **school portal**, and the **Modernage app**.

We look forward to seeing you back; rested, inspired, and ready to shine.

Warmest regards,

Academic Coordinator

Chemistry

Total Marks: 50 |

Q1: Let's Choose the Right Answer! (10 marks)

Circle the correct option :

1. The smallest particle of an element is called a:
a) Molecule b) Atom c) Ion d) Formula unit
2. One mole of water contains:
a) 18 b) 1 c) 6.022×10^{23} d) 6.626×10^{23}
3. $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ is known as:
a) Baking soda b) Baking powder c) Washing soda d) Bleaching powder
4. Rutherford concluded that an atom has:
a) No nucleus b) A positively charged nucleus c) Only electrons d) Neutrons in the nucleus
5. Dalton's theory failed to explain:
a) Laws of chemical combination b) Existence of elements c) Isotopes d) Behavior of solids
6. Electrons in the second shell (L shell) can be:
a) 2 b) 4 c) 8 d) 18
7. Isotopes differ in:
a) Atomic number b) Protons c) Neutrons d) Chemical properties
8. Which one is a pure substance?
a) Milk b) Salt solution c) Carbon dioxide d) Soil
9. Mass of one mole of a substance is called:
a) Atomic number b) Molecular mass c) Molar mass d) Avogadro number
10. Electrons in outer orbits have:
a) Lower energy b) Same energy c) Higher energy d) No energy change

Q2: Periodic Table Puzzle (4 marks)

- What is a periodic table?
- How are elements arranged in it?
- Can you name any **two categories** of elements based on their placement (e.g., metals, non-metals)?
Make it interesting with a **mini-drawing** or **colour code metals and nonmetals**.

Q3: Atomic Number vs Atomic Mass (3 marks)

Write **2 points of difference** between atomic number and atomic mass.

Use any **element** (like Oxygen or Carbon) to explain both!

Q4: Ion Formation – Let's Charge It Up! (4 marks)

Draw or show **how these atoms form ions**:

a) Cl b) Mg c) Be d) Br

Hint: Show **electron gain/loss** using simple circles or diagrams.

Q5: Is Water a Mixture or Compound? Explain in your own words: (3 Marks)

Why is **water (H₂O)** considered a **compound** and **not a mixture**?

Add a fun fact: Can we drink pure water found in nature?

Q6: Let's Build Electronic Configurations! (4 marks)

Write the electronic configuration for the following:

a) B b) Si c) Al d) K

Tip: Write the total electrons first, then place them in shells (K, L, M, N...)

Q7: Mole Magic! (3 marks)

A sample contains **0.5 moles of NaCl**.

Calculate its mass using the formula:

$$\text{Mass} = \text{Moles} \times \text{Molar Mass}$$

$$(\text{Na} = 23, \text{Cl} = 35.5)$$

Q8: Match Me If You Can! (5 marks)

Draw **lines or arrows** to match items from Column A with Column B.

Column A

Column B

1. Filtration → a. Used to separate liquids by boiling point

2. Distillation → b. Uniform mixture

3. Homogeneous → c. Separation based on particle size

4. Heterogeneous → d. Not uniform throughout

5. Physical change → e. No new substance formed

Q9: Let's Count the CO₂ Molecules! (4 marks)

You have **44 g of CO₂**.

Calculate the **number of molecules** using:

$$\text{Moles} = \text{Mass} \div \text{Molar Mass}$$

(Then multiply by **Avogadro's number** = 6.022×10^{23})

Q10: Isotopes Table Fun (6 marks)

Make a **neat table** for **Li-6, Li-7, and Li-8**, showing:

Isotope Protons Neutrons % Abundance Atomic Mass

Li-6

Li-7

Li-8

Then, calculate the **average atomic mass** based on abundance!

Tip: Use **(mass × abundance)%** formula for each and add!

Mathematics

Total Marks: 50

Sharpen your skills, explore concepts, and challenge yourself this summer!

Q1.i. Prove that in the following matrices commutative law of addition holds: $A = \begin{bmatrix} 2 & 5 \\ 4 & 7 \end{bmatrix}, B = \begin{bmatrix} -2 & 1 \\ -3 & 6 \end{bmatrix}$

ii. Verify Associative property of addition for the following matrices:

$$A = \begin{bmatrix} 2 & -3 \\ 4 & 1 \end{bmatrix}, B = \begin{bmatrix} 5 & -2 \\ 3 & 6 \end{bmatrix}, C = \begin{bmatrix} 1 & 7 \\ -6 & -3 \end{bmatrix}$$

iii. Verify Distributive property of multiplication over addition for the following matrices:

$$A = \begin{bmatrix} 1 & 2 \\ 3 & -1 \end{bmatrix}, B = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}, C = \begin{bmatrix} 3 & -1 \\ 0 & 2 \end{bmatrix}$$

Q2. i. If $A = \begin{bmatrix} 0 & -1 \\ 2 & 1 \end{bmatrix}, B = \begin{bmatrix} 2 & 3 \\ 1 & 0 \end{bmatrix}$, **then show that:**

a) $(AB)^{-1} = B^{-1}A^{-1}$ b) $(AB)^t = B^t A^t$

ii. Solve the following word problems by using both Inversion method & Cramer's Rule:

a) The length of a rectangular playground is twice its width. The perimeter is 30. Find its dimensions.

b) If twice the son's age in years is added to the father's age, the sum is 70. But if the father's age is added to the son's age, the sum is 95. Find the ages of father and son.

Q3. Simplify:

i. $(-2a^2b^3)^3$ ii. $\frac{2^{p+1} \cdot 3^{2p-q} \cdot 5^{p+q} \cdot 6^q}{6^p \cdot 10^{q+2} \cdot 15^p}$ iii. $\left(\frac{x^p}{x^q}\right)^{p+q} \cdot \left(\frac{x^q}{x^r}\right)^{q+r} \cdot \left(\frac{x^r}{x^p}\right)^{r+p}$ iv. $\sqrt{\frac{625x^3y^4}{25xy^2}}$

Q4. Perform the indicated operations and reduce to the form $a + bi$

i. $(6 + 3i) + (3 - 5i)$ ii. $(5 - 8i) - (7 + 3i)$ iii. $(1 + 2i) \times (3 - 8i)$ iv. $(4 + 3i) \div (1 - i)$

Q5. i. If two angles and a non-included side of one triangle are congruent to the corresponding angles and non-included side of another triangle, then the triangles are congruent.

ii. If in the corresponding of two right angled triangles, the hypotenuse and one side of one are respectively congruent to the hypotenuse and the corresponding side of the other, the triangles are congruent.

Q6. i. If two opposite sides of a quadrilaterals are congruent, then the quadrilateral is parallelogram.

ii. The line segment, joining the midpoints of two sides of a triangle, is parallel to the third side and is equal to one half of its length.

Q7. i. Any point on the right bisector of a line segment is equidistant from end points of the segments.

ii. The bisectors of the angles of a triangle are concurrent.

Q8. Construct the following angles with the help of compass:

i. 60° ii. 30° iii. 90° iv. 45° v. 75° vi. 105° vii. 120°

Q9. i. Construct ΔKLM such that, $m\overline{KM} = 5cm$, $m\angle K = 105^\circ$, $m\angle L = 45^\circ$

ii. Construct ΔABC such that $m\overline{AB} = 3.6cm$, $m\angle A = 75^\circ$, and $m\angle B = 45^\circ$

Q10. Construct a ΔABC (whenever possible), for the following assumptions:

$m\overline{AB} = 6cm$, $m\overline{AC} = 5.6cm$, and $m\angle B = 60^\circ$

Pakistan Studies

Total Marks: 50

Discover Pakistan — Explore its beauty, history, and importance!

Q1. Let's become question makers! (15 marks)

Create **30 fill-in-the-blanks** from your textbook:

- **15 from Chapter 2**
- **15 from Chapter 3**

Tips: Choose facts about geography, history, people, and natural resources. Keep the sentences short and clear!

Q2: Why is Pakistan So Important? (10 marks)

Pakistan is located at the **crossroads of South Asia, Central Asia, and the Middle East**, touching borders with **India, China, Afghanistan, and Iran**.

Research and write any 5 key points about Pakistan's geographical importance.

Try to mention:

- Trade routes
- Gawadar Port
- Strategic location
- Natural resources
- Cultural and political connections

Add a small colourful world map or flags of neighboring countries!

Q3: Draw the map of Pakistan and show the major projects of CPEC (China-Pakistan Economic Corridor). (10 marks)

Mark:

- Gawadar Port
- Motorways & highways
- Special Economic Zones (SEZs)
- Cities like Sukkur, Quetta, Lahore, Gilgit, etc.

Use coloured pencils and label neatly!

Q4: Did you know the mountain ranges of Pakistan affect our weather, rivers, and even animals?

Write a short **paragraph (6–8 lines)** explaining how: **(7 Marks)**

- Mountains affect rainfall and climate
- Provide water through glaciers and rivers
- Create habitats for rare plants and animals

Q5: Find and write the UN resolution related to Kashmir. (8 marks)

Then use your creativity to **propose a peaceful plan** to solve the issue. Your plan can include:

- Dialogues between countries
- Role of United Nations
- Rights of the Kashmiri people
- Peaceful negotiations

کل نمبر: 50

پاکستان کو دریافت کریں۔ اس کے حسن، تاریخ اور اہمیت کو جانیں!

سوال 1: اپنی درسی کتاب سے خالی جگہوں والے 30 سوالات بنائیں: (15 نمبر)

15 سوالات باب نمبر 2 سے

15 سوالات باب نمبر 3 سے

رہنمائی:

- جغرافیہ، تاریخ، مشہور شخصیات اور قدرتی وسائل سے متعلق اہم حقائق چنیں۔
- جملے مختصر اور آسان رکھیں۔

(10 نمبر)

سوال 2: پاکستان اتنا اہم کیوں؟

پاکستان جنوبی ایشیا، وسطی ایشیا اور مشرق وسطیٰ کے سنگم پر واقع ہے، اور اس کی سرحدیں بھارت، چین، افغانستان اور ایران سے ملتی ہیں۔ تلاش کریں اور پاکستان کی جغرافیائی اہمیت کے 5 اہم نکات لکھیں۔

کوشش کریں کہ ان باتوں کا ذکر کریں:

• تجارتی راستے

• گوا در بندر گاہ

• اسٹریٹجک (حساس) محل وقوع

• قدرتی وسائل

• ثقافتی اور سیاسی روابط

اضافی نمبر: ایک چھوٹا سا رنگین دنیا نقشہ یا ہمسایہ ممالک کے جھنڈے بنائیں یا چسپاں کریں!

سوال 3: پاکستان کا نقشہ بنائیں اور اس پر چین۔ پاکستان اقتصادی راہداری (CPEC) کے اہم منصوبے ظاہر

(10 نمبر)

کریں۔

نقشے پر درج کریں:

• گوا در بندر گاہ

• موٹرویز اور ہائی ویز

• خصوصی اقتصادی زونز (SEZs)

• اہم شہر: سکھر، کوئٹہ، لاہور، گلگت وغیرہ
• رنگین پنسلیں استعمال کریں اور لیبل واضح لکھیں۔

سوال 4: کیا آپ جانتے ہیں کہ پاکستان کے پہاڑی سلسلے ہمارے موسم، دریا اور جانوروں کی زندگی پر گہرا اثر ڈالتے ہیں؟
(7 نمبر)

کیا آپ جانتے ہیں کہ پاکستان کے پہاڑی سلسلے ہمارے موسم، دریا اور جانوروں کی زندگی پر گہرا اثر ڈالتے ہیں؟
ایک پیرا گراف (6 سے 8 سطریں) لکھیں:

• پہاڑ بارش اور موسم کو کیسے متاثر کرتے ہیں

• گلشیر ز اور دریایانی کیسے فراہم کرتے ہیں

• نایاب پودوں اور جانوروں کے لیے گھر کیسے بنتے ہیں۔

سوال 5 اقوام متحدہ کی وہ قرارداد تلاش کریں جو کشمیر کے بارے میں ہو:

پھر اپنی تخلیقی صلاحیت سے ایک پرامن منصوبہ بنائیں جس میں یہ نکات شامل ہو سکتے ہیں:

• ملکوں کے درمیان بات چیت

• اقوام متحدہ کا کردار

• کشمیری عوام کے حقوق

• پرامن مذاکرات اور حل

English

Total Marks: 50

Explore. Imagine. Express. Let's make English fun this summer!

Q1: Let's Read – Comprehension Fun! (10 Marks)

Read this short passage and answer the fun questions!

“Books are our best friends. They never leave us and are full of knowledge. Reading stories and poems helps us travel to faraway lands without leaving our chair! People who read more become smarter, more creative, and better speakers.”

Now answer:

1. What makes books our best friends?
2. How does reading help us?
3. Suggest a title for the passage.
4. Write a word from the passage that means “far from here.”
5. What lesson do you learn from this passage?

Q2: Paraphrase a Poem!**(5 Marks)**

Pick **any one** of the following stanzas from your book (like “Daffodils”) and rewrite it in your own easy words.

Use 4–5 lines. Add emojis or sketches to make it fun!

Q3: Magic of Tenses!**(4 Marks)**

Complete the sentences with correct verb forms:

1. The cat _____ (sit) on the mat.
2. I _____ (complete) my work yesterday.
3. They _____ (watch) TV when the power went out.
4. She _____ (read) a book now.

Q4: Urdu to English – Translation Time!**(6 Marks)**

- وہ صبح سے پڑھ رہا ہے۔
- کیا وہ سکول جاتی ہے؟
- بچے پانی سے کھیل رہے تھے۔
- کیا تم نے اپنا کام مکمل کیا؟
- محنت کا پھل میٹھا ہوتا ہے۔
- کیا ہم کل فلم دیکھنے جائیں گے؟

Q5: Idiom Parade!**(4 Marks)**

Use these idioms in your own creative sentences:

1. A piece of cake
2. Hit the books
3. Under the weather
4. Once in a blue moon

Q6: Creative Letter Writing**(6 Marks)**

Write a letter to your friend sharing your summer break plans and how you are balancing fun and studies!

Q7: Story Time with a Twist!**(6 Marks)**

Complete the story using this outline:

A poor boy → finds wallet → returns it → owner rewards him → people praise → Moral: **Honesty is the best policy**

Q8: Mini-Dialogue Writing!**(4 Marks)**

Write a short dialogue between **you and your English teacher** about how to become a better reader.

Example:

Student: Ma'am, how can I enjoy reading more?

Teacher: Start with short stories or comic books. Reading is an adventure!

Biology

(Only for Bio Group)

Marks: 50

Let's Explore the World of Living Things!

1. What is Biology? (5 marks)

In your own words, **define biology**. Why do we call it the **science of life**?

Write at least **3 meaningful sentences**. You can include an example of something alive that fascinates you!

2. Draw a well-labeled diagram of a plant cell. (5 marks)

Use colours and label **at least 5 parts** (like nucleus, cell wall, etc.)

3. Write two main differences between plant cells and animal cells. (5 marks)

Add an example if you can (like a leaf cell vs a skin cell).

4. Write the functions of these important organelles: (6 marks)

a) **Nucleus**

b) **Mitochondria**

c) **Vacuole**

Try comparing them to things in real life (e.g., nucleus = brain of the cell).

5. Why is the microscope such a cool and important tool in biology? (3 marks)

Write 2–3 lines about how it helps us explore tiny worlds.

6. Write the word equation for photosynthesis. (5 marks)

Also, name the **two main raw materials** plants need to make food!

7. Why is personal hygiene important for good health? (3 marks)

Give **2 examples** from your daily life (e.g., washing hands before eating)

8. List any three human body systems and write what they do. (5 marks)

Example: *Digestive system – breaks down food so the body can use it.*

9. Create a simple food chain with four organisms. (5 marks)

Clearly mark the **producer** and the **top consumer**.

10. During your holidays, observe one plant or insect closely for a few days. (8 marks)

Write a short paragraph (**5–6 lines**) about what you saw.

You can include how it looks, behaves, eats, or changes.

You may also **paste a photo or make a drawing!**

Computer Science

(Only for Computer Science Group)

Total Marks: 50

Submit in the first week after school reopens

Explore the digital world this summer!

Q1: Define *communication devices* in your own words. (4 marks)

Then name **3 real-life examples** (Hint: Think of devices that help computers “talk” to each other).

Q2: What does a **modem** do in a computer network? (4 marks)

Q3: Router vs Switch – Spot the Difference! (5 marks)

- Define **Router**
- Define **Switch**

In 2–3 lines, write how they are different from each other.

Q4: Draw a **communication network diagram** that includes: **(6 marks)**

- A **router**
- A **modem**
- A **switch**

Write a short paragraph explaining what each one does.

Use colours and labels to make your diagram creative and clear!

Q5: Define **Network Topology** **(4 marks)**

List any **4 common types** (Hint: Star, Bus... can you name the rest?)

Q6: Draw and explain the **Star Topology** **(6 marks)**

Draw and explain the **Bus Topology**

In your words, share one difference between them.

Q7: Write **two advantages** and **two disadvantages** of **Mesh Topology**. **(4 marks)**

Use bullet points or a mini comparison table.

Q8: Compare **Fiber Optic Cable** and **Twisted Pair Cable** **(5 marks)**

Use these questions to help:

- Which one is faster?
- Which one costs more?
- Where is each one used?

Physics

Total Marks: 50

Section A: Brain Teasers – MCQs (10 Marks)

Tick the correct option (1 mark each):

- The SI unit of force is:

<input type="radio"/> a) gram	<input type="radio"/> b) newton
-------------------------------	---------------------------------
- | | |
|-----------------------------------|--------------------------------|
| <input type="radio"/> c) kilogram | <input type="radio"/> d) joule |
|-----------------------------------|--------------------------------|
- Friction always acts:

<input type="radio"/> a) In the direction of motion	<input type="radio"/> b) Perpendicular to motion
<input type="radio"/> c) Opposite to the direction of motion	<input type="radio"/> d) None of these
- Which of these is a contact force?

<input type="radio"/> a) Gravitational force	<input type="radio"/> b) Electrostatic force
<input type="radio"/> c) Magnetic force	<input type="radio"/> d) Friction
- The rate of change of velocity is called:

<input type="radio"/> a) Speed	<input type="radio"/> b) Uniform Velocity
<input type="radio"/> c) Acceleration	<input type="radio"/> d) Displacement

2. What is **friction**? State **two advantages** and **two disadvantages** in daily life.
3. Describe **centripetal force** in circular motion with an example like **a tied ball in motion** or **earth revolving around the sun**.

جماعت ہشتم

کل نمبر: 50

مضمون: اُردو

سوال نمبر 1: عید کے رنگ، ماں بیٹی کے سنگ! (10 نمبر)

عید الاضحیٰ کے موقع پر ماں اور بیٹی کے درمیان ہونے والا ایک پیارا سا مکالمہ (گفتگو) لکھیں۔

خیال رکھیں

بات چیت محبت، تیاریوں، قربانی اور خوشی سے بھرپور ہو

مکالمے میں کم از کم 6 جملے ہوں

سوال نمبر 2: میرا نصب العین۔ میرا خواب! (10 نمبر)

اپنے دوست کو ایک خط لکھیں جس میں آپ اُسے اپنے نصب العین (مقصدِ زندگی) کے بارے میں بتائیں۔

شامل کریں

آپ کا خواب کیا ہے؟

آپ اسے حاصل کرنے کے لیے کیا کر رہے ہیں؟

آپ اپنے دوست کو کیا مشورہ دیں گے؟

خط صاف اور ترتیب سے لکھا ہو۔

سوال نمبر 3: علمُ البیان۔ زبان کا حسن! (10 نمبر)

درج ذیل علمُ البیان کے ارکان کی تعریف اور مثالیں لکھیے۔

تشبیہ ، استعارہ

کنایہ ، جازمرسل

ہر ایک کی ایک ایک آسان اور روزمرہ مثال بھی ضرور دیں تاکہ بات واضح ہو جائے۔

سوال نمبر 4: روزمرہ، محاورہ اور ضربُ المثل کی تعریف لکھیں اور مثالیں دیں۔ (10 نمبر)

سوال نمبر 5: دو معنی الفاظ کے کہتے ہیں؟ (10 نمبر)

پانچ ایسے الفاظ لکھیں جو ایک سے زیادہ معنی رکھتے ہوں۔

سوال نمبر 1: سورۃ الانفال کا مکمل تعارف تحریر کریں۔ (10 نمبر)

سورۃ الانفال کا ایک مرکزی پیغام تصویری خاکے یا پوسٹر کی شکل میں بنائیں۔

سوال نمبر 2: عہد صدیقی میں قرآن کی حفاظت پر نوٹ لکھیں۔ (10 نمبر)

حضرت ابو بکر صدیقؓ کے دور میں قرآن کے جمع ہونے کے مراحل کو تصویری ترتیب کی شکل میں پیش کریں۔

کوئی دلچسپ واقعہ مختصر انداز میں الگ سے لکھیں۔

سوال نمبر 3: حضرت عیسیٰؑ کے معجزات تحریر کریں۔ (10 نمبر)

ہر معجزے کے ساتھ اس سے ملنے والا سبق بھی لکھیں۔

سوال نمبر 4: جنگ کی صورت میں مسلمانوں کو کفار کے ساتھ مقابلے کے وقت کن کاموں کا خیال رکھنا چاہیے؟ (10 نمبر)

ایک چارٹ بنائیں جس میں اسلامی جنگی اصولوں کو "کرنا ہے" اور "نہیں کرنا" کے کالموں میں درج کریں۔

قرآن و حدیث سے کم از کم دو حوالے شامل کریں۔

سوال نمبر 5: فتنہ دجال پر نوٹ لکھیں۔ (10 نمبر)

دجال کی علامات کو مختصر پوائنٹس میں لکھیں اور اس سے بچنے کی دعائیں اور اعمال تحریر کریں۔