DELHI PUBLIC SCHOOL VISAKHAPATNAM
ASSIGNMENT
June – July 2026

Class: XII Science **Date of Submission: on or before 7.08.2026**

Subject: ENGLISH

Formal Invitation and Replies – Model Questions & Answers

1. Formal Invitation

You are the Principal of ABC Senior Secondary School, Hyderabad. Your school is organising its Annual Prize Distribution Ceremony on 15 August 2026 at 10:00 a.m. in the school auditorium. Prepare a formal printed invitation inviting parents and distinguished guests.

ABC SENIOR SECONDARY SCHOOL
Hyderabad
Cordially Invites You
to the
Annual Prize Distribution Ceremony
to celebrate the outstanding achievements of our students.
Chief Guest
Dr. R. Srinivas
Vice-Chancellor, Hyderabad Central University
Date: Saturday, 15 August 2026
Time: 10:00 a.m.
Venue: School Auditorium
Your gracious presence will greatly encourage our young achievers.

R.S.V.P.
Principal
ABC Senior Secondary School
Hyderabad

2. Formal Reply – Acceptance- As Dr. R. Srinivas, write a formal reply accepting the invitation.

Dr. R. Srinivas
Vice-Chancellor
Hyderabad Central University

10 August 2026
The Principal
ABC Senior Secondary School
Hyderabad

Subject: Acceptance of Invitation
Sir,
I sincerely thank you for inviting me to the Annual Prize Distribution Ceremony to be held on 15 August 2026.
I am pleased to accept your invitation and shall be honoured to attend the programme as the Chief Guest. I look forward to interacting with the students and being a part of the celebration.
Yours sincerely,
Dr. R. Srinivas

3. Formal Reply – Regret-As Dr. R. Srinivas, write a formal reply expressing your inability to attend the function.

Dr. R. Srinivas
Vice-Chancellor
Hyderabad Central University

10 August 2026

The Principal
ABC Senior Secondary School
Hyderabad

Subject: Regret for Inability to Attend
Sir,
Thank you very much for your kind invitation to attend the Annual Prize Distribution Ceremony on 15 August 2026.
I regret that I shall be unable to attend the function due to a prior official commitment on the same day. I appreciate your thoughtful invitation and convey my best wishes for the success of the event and for the continued achievements of your students.
Yours sincerely,
Dr. R. Srinivas

Formal Invitation: Use a boxed format, avoid personal pronouns, and include occasion, host, date, time, venue, chief guest (if any), and RSVP.
Formal Reply: Write in the format of a formal letter with a subject line, expressing either acceptance or regret politely and concisely.
Three-Paragraph Format | 180–200 words each)

1. The Tiger King----Power often creates the illusion that people are above nature and destiny. Evaluate this statement with reference to The Tiger King. What message does the story convey about leadership and human arrogance?
2. Journey to the End of the Earth----Imagine you are addressing a global climate summit. Using ideas from Journey to the End of the Earth, explain why Antarctica is crucial to humanity's future and suggest measures to protect it.
3. Deep Water----Fear often becomes the greatest obstacle to success. Analyse how Douglas transformed fear into confidence. How is his experience relevant to young people today?
4. Indigo----Social transformation begins with courageous leadership and collective participation. Discuss this statement with reference to Indigo. How is Gandhiji's approach relevant in today's world?
5. The Rattrap----Compassion has the power to transform even the most troubled individuals. Evaluate this statement with reference to The Rattrap.

Reference to Context -Poetry | Competency-Based | CBSE Pattern

1. Keeping Quiet – Pablo Neruda

Now we will count to twelve
and we will all keep still.
For once on the face of the Earth,
let's not speak in any language,
let's stop for one second,
and not move our arms so much.

a) What does the poet urge people to do in these lines? (1)
b) What is the significance of the phrase "count to twelve"? (1)
c) Which poetic device is used in the expression "on the face of the Earth"? (1)
d) How can silence contribute to personal and global well-being? Explain with reference to the poem. (2)

2. A Thing of Beauty – John Keats

A thing of beauty is a joy for ever:
Its loveliness increases; it will never
Pass into nothingness; but will keep
A bower quiet for us, and a sleep
Full of sweet dreams, and health, and quiet breathing.

a) Why does the poet call a thing of beauty "a joy for ever"? (1)
b) What does the expression "bower quiet" suggest? (1)
c) Identify the poetic device in "A thing of beauty is a joy for ever." (1)
d) How does beauty help human beings overcome the difficulties of life? Explain with reference to the poem. (2)

3. A Roadside Stand – Robert Frost

The little old house was out with a little new shed
In front at the edge of the road where the traffic sped,
A roadside stand that too pathetically pled,
It would not be fair to say for a dole of bread,
But for some of the money, the cash, whose flow supports
The flower of cities from sinking and withering faint.

a) Why was the roadside stand set up by the villagers? (1)
b) What does the expression "flower of cities" refer to? (1)
c) Identify the poetic device in "the roadside stand... pathetically pled." (1)
d) What social issue does the poet highlight through this extract? Explain briefly. (2)

Subject: MATHEMATICS

1. Prove that whether f_1 = {(1, 3), (2, 5), (3, 7)} ; A = {1, 2, 3}, B = {3, 5, 7} function from A to B is one - one and onto?
2. Let S be the set of all real numbers and let R be a relation in S defined by R = {{a, b):(1 + ab) > 0}. Show that R is reflexive and symmetric but not transitive.
3. Show that the relation R in the set A = {1, 2, 3, 4, 5, 6} given by R = {(a, b): |a – b| is divisible by 2} is an equivalence relation.
4. Write the smallest equivalence relation on the set A = {1, 2, 3}.
5. $cosec^{-1}(-\sqrt{2})$ = ?
6. Find the principal value of $\text{cosec}^{-1}\left(-\sqrt{2}\right)$.
7. Find the domain of f(x) = $\sin^{-1}$ (- x ^{2}).
8. Let A=$\begin{bmatrix} 2 & -3 \\ -7 & 5 \end{bmatrix}$ and B= $\begin{bmatrix} 1 & 0 \\ 2 & -4 \end{bmatrix}$, verify that (AB) ^{T} = B ^{T} A ^{T}
9. Show that AB = BA in the case: $A = \begin{bmatrix} 10 & -4 & -1 \\ -11 & 5 & 0 \\ 9 & -5 & 1 \end{bmatrix} and\ B = \begin{bmatrix} 1 & 2 & 1 \\ 3 & 4 & 2 \\ 1 & 3 & 2 \end{bmatrix}$
10. If $X = \begin{bmatrix} 3 & 1 & -1 \\ 5 & -2 & -3 \end{bmatrix}$ and $Y = \begin{bmatrix} 2 & 1 & -1 \\ 7 & 2 & 4 \end{bmatrix}$, then find 1) X + Y 2) 2X - 3Y

Subject: PHYSICS

1. A wire placed along the north-south direction carries a current of 8 A from south to north, Find the magnetic field due to a 1 cm piece of wire at a point 200 cm north-east from the piece.
2. A current of 10 A is flowing east to west in a long wire kept horizontally in the east – west direction. Find magnetic field in a horizontal plane at a distance of (i)10cm north (ii)20cm south from the wire.
3. The plane of a circular coil is horizontal. It has 10 turns each of radius 8 cm. A current of 2 amp flows through it. The current appears to flow clockwise from the point above the coil. Find the magnetic field at the centre of the coil due to current.
4. Two identical circular coils of radius 0.1 m, each having 20 turns are mounted co-axially 0.1 m apart. A current of 0.5 A is passed through both of them (i) in the same direction, (ii) in the opposite directions. Find the magnetic field at the centre of each coil.
5. Two coaxial circular loops L_1 and L_2 of radii 3 cm and 4 cm are placed as shown. What should be the magnitude and direction of the current in the loop L_2 so that the net magnetic field at the point O be Zero.
6. Two identical circular wires P and Q each of radius R and carrying current I are kept in perpendicular planes such that they have a common centre. Find the magnitude and direction of the net magnetic field at the common centre of the two coils.

Subject: CHEMISTRY

Chapters covered- d & f block elements(ch-4) and Haloalkanes (ch-6)

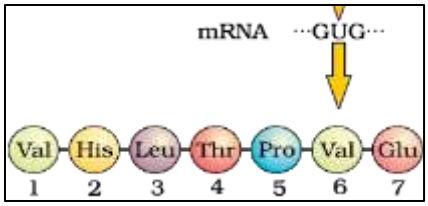
1. Account for the following:

a. There occurs much more frequent metal-metal bonding in compounds of heavy transition metals.
b. Mn^{2+} is much more resistant towards oxidation than Fe^{2+}.
c. There is a greater horizontal similarity in the properties of transition elements than of the main group elements.
d. Ti^{4+} is colourless whereas V^{4+} is coloured in aqueous solution.
e. Ni (II) compounds are thermodynamically more stable than Pt (II) compounds.
f. The enthalpy of atomization of zinc is lowest in the 3d series.
g. Cr^{2+} is reducing in nature while with the same d^4 configuration Mn^{3+} is an oxidizing agent.

h. In a transition series of metals, the metal which exhibits the greatest number of oxidation states occurs in the middle of the series.
i. Transition metals form large number of complex compounds.
j. copper (I) compounds are white while copper (II) compounds are coloured.
k. The E^0 value for the Mn^{3+}/Mn^{2+} couple is much more positive than that for Cr^{3+}/Cr^{2+} couple.
l. Zn, Cd and hg are soft and have low melting point.
m. The ionization enthalpies of Ce, Pr and Nd are higher than Th, Pa and U.
n. Highest fluoride of Mn is MnF_4 while highest oxide is Mn_2O_7. o. Eu^{2+} is a strong reducing agent.
2. When an oxide of manganese A is fused with KOH in the presence of an oxidizing agent and dissolved in water, it gives a dark green solution of compound B. Compound B disproportionates in neutral or acidic solution to give a purple compound C. An alkaline solution of compound C oxidises potassium iodide solution to a compound D and compound A is also formed. Identify compounds A to D and also explain the reactions involved.
3. Write 4 similarities and 4 differences between lanthanoids and actinoids.
4. Give reason for the following:
i) The order of reactivity of haloalkanes is RI>RCl>RBr. ii) Neopentyl chloride does not follow sn2 mechanism. iii) n-Butyl bromide has higher boiling point than t-butyl bromide.
iv) Electrophilic substitution in haloarenes occurs slowly. v) The presence of nitro group at o/p position increases the reactivity of haloarenes towards nucleophilic substitution reactions.
vi) Dipole moment of iodobenzene is higher than luorobenzene.
5. Haloarenes are less reactive than haloalkanes. Explain giving resonance structures.
6. Compound A with molecular formula C_4H_9Br is treated with aq KOH solution. The rate of this reaction depends upon the concentration of the compound A only. When another optically active isomer B of this compound was treated with aq KOH solution, the rate of reaction was found to be dependent on concentration of compound and KOH both.
i. Write down the structural formulae of both A and B.
ii. Out of these two compounds, which one will be converted to the product with inverted configuration?
7. An organic compound A having formula C_4H_8 on treatment with dil sulphuric acid gives B. B on treatment with anhydrous $ZnCl_2$ and HCl gives C and on treatment with sodium ethoxide gives back A. Identify the compounds A,B,C and write the equations involved.

Subject: BIOLOGY

1. What are the components of a nucleoside ?
2. Tendency of gene to link together in a same locus is called _____
3. Who proposed that the first form of life came from pre-existing non living organic molecules?
4. (i)What are the four levels at which gene expression is regulated in eukaryotic cell?
   (ii)Name the regulatory gene of Lac –operon .
5. What is trisomy, Give an example.
6. Differentiate between convergent and divergent evolution.
7. a- Categorize following either autosomal or sex-linked disease- Hemophilia, Sickle cell anemia, Phenylketonuria
   b- Identify the disorder by the following symptom- Individuals with overall masculine development with i.e., Gynecomastia
   c- In the given diagram a polypeptide is given. What conclusion will you arrive after careful observation-



8. Write the coding sequence of the following m RNA strand-
   5' AAUGUUAGAGAGUAGGGAAU3'

Subject: ARTIFICIAL INTELLIGENCE

1. Differentiate between classification and detection.
2. What is the significance of pixels in digital images?
3. What are the main challenges faced by computer vision systems?
4. Describe the working process of Computer Vision in detail. What are the major steps involved in analyzing and processing digital images?
5. Discuss the role of Optical Character Recognition (OCR) in Computer Vision. How does it enable machines to extract text from images, and what are its applications?

Subject: PHYSICAL EDUCATION

Which asanas will you suggest for Obesity, Back pain, Hypertension, Asthma, Diabetes?
Explain its procedures, Benefits and contradictions.