



# DAV POLICE PUBLIC SCHOOL

New Police Lines, Panipat

Summer Vacation Work (2026-27)

Class- XII (Humanities)



## ENGLISH CORE (301)

### **Instructions:**

- Complete the given Assignment neatly in your English notebook.
- Follow the word limit and format guidelines strictly.
- Submit the homework on the first day after the vacation.
- Originality will be appreciated. Avoid plagiarism.
- Use your creativity where required.
- Revise the entire syllabus done in class.

### **Project Work:**

Each student should prepare and submit his/her Project Work Report. Following essentials need to be fulfilled for its preparation and submission.

The following parameters will be applicable for the topic:

- The entire project should be in file format.
- The project should be handwritten in blue/ black pen (Highlighters can be used).
- The project report should be developed in the following sequence-
- Cover page: School Name, Title Statement, Name of the student and year / Session.
- Index (List of contents)
- Acknowledgement
- Certificate
- Introduction Statement (The purpose of the project)
- Detailed project report
- Learning outcomes/experiences
- Use A4 size sheets

Project work should be well illustrated with relevant / related / supportive photos/ pictures thereof

- Total pages: 10-15

Topics are allotted section wise which are mentioned below:

A1- THE LAST LESSON

A2- LOST SPRING

A3- MY MOTHER AT SIXTY-SIX

B1- KEEPING QUIET

C1- THE THIRD LEVEL

C2- THE TIGER KING

## हिंदी (302)

1. कक्षा- कक्ष में करवाए गए पाठ्यक्रम की पुनरावृत्ति कीजिए।

2. अप्रत्याशित विषयों पर रचनात्मक लेखन

(क) कोचिंग संस्थानों का बढ़ता जंजाल

(ख) नदी किनारे बरसात से घिर जाना

(ग) चारों तरफ दिखावा ही दिखावा

3. परियोजना कार्य-

(i) 'एक गीत' - हरिवंश राय बच्चन की कविता का विश्लेषण (अनुक्रमांक 1 से 17)

- कवि परिचय, कविता का सार, मूल भाव
- प्रतीकों और बिम्बों का विश्लेषण करना
- वर्तमान से जोड़ना : आज के युवाओं की अकेलेपन की समस्या

(ii) 'पतंग'- आलोक घन्वा की कविता का विश्लेषण ( अनुक्रमांक 18 से 34)

- कवि परिचय, कविता का सार, मूल भाव
- प्रतीकों और बिम्बों का विश्लेषण करना
- आज के डिजिटल युग में बच्चों के बचपन की तुलना करना
- वर्तमान से जोड़ना: पतंग और मोबाइल

(iii) महादेवी वर्मा का 'भक्तिन' - स्त्री संघर्ष और सेवाभाव का दस्तावेज

(अनुक्रमांक 19 से 50)

- लेखिका परिचय, पाठ का सार
- चरित्र विश्लेषण: विरोधाभासों से भरी भक्तिन

- तुलना: 1940 की भक्ति और 2026 की कामकाजी महिला क्या बदला? क्या आज भी 'लछमिन' जैसी औरतें शोषण झेलती हैं?
- सामाजिक मुद्दा: घरेलू कामगारों की स्थिति

## HISTORY (027)

- Learn the following chapters.  
Chapter 1 Harappan Civilisation  
Chapter 3 Kinship, Class and Caste  
Chapter 4 Thinkers, Belief and Building  
Chapter 11 Rebels and the Raj
- Do the assignment of following chapters (given in pdf) in fair notebook.
- Locate the Mature Harappan sites and Centres of Revolt on Political Map of India.
- Prepare a **Project Work** on the topics allotted.  
Instructions for preparing Project File
  - Project work must contain 35-40 pages which includes:
    - Title page
    - Certificate
    - Acknowledgement
    - Introduction of Topic
    - Index
    - Content
    - Conclusion
    - Bibliography
  - The Project Report should be handwritten only. (Eco-Friendly materials can be used by the students)
  - A copied report will not be acceptable.
  - Use colorful images, timelines, maps to make it more reliable.
  - Do not use Red, Green and any sparkle pen.
  - File cover must be symmetrical to sheet size.

## **POLITICAL SCIENCE (028)**

- Revise the following chapters and do the assignment in fair notebook

Chapter The End of Bipolarity

Chapter Challenge of building a nation

Chapter Challenge to the Restoration of the Congress System

Chapter The Crisis of Democratic Order

## **ECONOMICS (030)**

- Revise:

Chapter 1- Indian economy on the eve of independence

Chapter 2- Indian Economy (1950 - 1990)

Chapter 3- Economy Reform since 1991

Chapter 10- Government Budget

- Solve the given assignment in your economics notebook.

Topics for project work

- Central Bank and its Functions
- Role of Banks in the Indian Economy
- Credit Creation Process
- Government Budget and its Components
- Exchange Rate Systems
- Foreign Exchange Markets
- Balance of Payments (BOP)
- Goods and Services Tax (GST)
- Demonetization
- Poverty and Unemployment in India
- Banking Sector Reforms
- Tax Reforms
- Import Substitution vs Export Promotion
- A New Approach – Sustainable Development
- Comparative Study of India and China's Economy

- Indian Economy on the Eve of Independence
- Pre-Independence Role of Railways – A Critical Analysis
- RBI's Policies to Curb Inflation and Appreciate Currency Value
- Rural Development – Factors and Government Initiatives
- Growth of Education Sector in India
- Growth of Health Sector in India
- Cooperatives – Case Study
- Self Help Groups (SHGs) – Case Study
- Aggregate Demand and its Components
- Short Run Equilibrium Output

Following essentials need to be fulfilled for its preparation and submission.

The following parameters will be applicable for the topic:

1. The entire project should be in file format.
2. The project should be handwritten in blue/ black pen ( Highlighters can be used).
3. The project report should be developed in the following sequence-
  - \* Cover page: School Name, Title Statement, Name of the student and year / Session.
  - \* Index ( List of contents)
  - \* Acknowledgement
  - \* Certificate
  - \* Introduction Statement ( The purpose of the project)
  - \* Detailed project report
  - \* Learning outcomes/experiences
  - \*\* Use A4 size sheets
  - \*\* Project work should be well illustrated with relevant / related / supportive photos/ pictures thereof
  - \*Total pages: 30- 40

## MATHEMATICS (041)

- **Revise:**

**Chapter 2 - Inverse Trigonometric Functions**

**Chapter 3 - Matrices**

**Chapter 4 - Determinants**

- **Do Assignment Questions in separate notebook.**
- **Do lab Manual activity 1 (Types of Relations) and 5 (Inverse Trig. Functions)**

## PHYSICAL EDUCATION (048)

- 1. Prepare 5 yogasana and 3 pranayama
- 2. Revise chapter -1 and 2
- 3. Prepare any one game for practical

(Games for practical: basketball, football, kabaddi, athletics, kho-kho, cricket, hockey)

## PAINTING (049)

Complete your 10 page in art file (05 with pencil shading and 5 with colour. **One student submit one project.**

Project work (Note Canvas board size 15 inch/18 inch)

- Buddha painting on Canvas board with acrylic color.
- Mandala painting on canvas board with acrylic color.
- Lippan art painting on MDF board and canvas with acrylic color and mirror work.
- African painting on MDF board and canvas with acrylic color.
- Warli art painting on canvas board with color and permanent marker

## INFORMATICS PRACTICES / ARTIFICIAL INTELLIGENCE

- Write 10 programs of creating series with different elements such as Integer, String, Decimal, NumPy Array, List, Dictionary in Lab Manual and practice.

## **PHYSICAL EDUCATION (048)**

Do all the assigned work in lab manual:

a) Write down 3 Test

1. Body Mass Index Test (BMI)
2. Flamingo Balance Test
3. Sit and Reach Test

b) Write down any one Game and Diagram should be hand made

c) Write down 5 Yoga Asan

1. Vajrasana
2. Ardhamatsyendrasana
3. Halasana
4. Pawanmukt Asana
5. Shavasna





# DAV POLICE PUBLIC SCHOOL

New Police Lines, Panipat

**Holidays' Assignment (2026-27)**

**Class- XII (Humanities)**



## ENGLISH CORE (301)

Q.1. You are Karan/Simran, a student of Class 12B. You have lost your Physics Practical file in the school library. Draft a notice for the notice board.

Instructions:

- Describe the item briefly.
- Mention when and where it was lost.
- Request the finder to return it.

Q 2. You are the Head Boy/Head Girl of City International School. Draft a notice informing prefects about a meeting to plan the Annual Sports Day.

Instructions:

- Mention the purpose of the meeting.
- Give date, time, and venue.
- Make it formal and concise.

Q 3. You are the Secretary of the History Club of Vidya Mandir School. Draft a notice in not more than 50 words informing students of a proposed visit to some important historical sites in your city.

Instructions:

- Mention the purpose of the meeting.
- Give date, time, and venue.
- Make it formal and concise.

Q 4. Your school is organizing a trip to Jaipur for Class 12 students. As the Tour In-Charge, draft a notice to be put up on the school board.

Instructions:

- Mention dates, charges, and teacher in charge.
- Include a deadline for consent form submission.

Q 5. You are Riya/Arjun, Secretary of the Red Cross Society Unit of your school. Write a notice informing students about a blood donation camp being organized in the school auditorium.

Instructions:

Provide necessary details like time, date, and eligibility.

Motivate students to participate.

Q 6. You are Saurabh/Saumya, a resident of 15, Mall Road, Pune. You have seen an advertisement in The Times of India for the post of Software Engineer in a reputed company. Write an application in response to the advertisement applying for the post. (Word limit: 120-150 words)

Q 7. You are Sanjay/Sanjana, a resident of 14, Laxmi Nagar, New Delhi. You have seen an advertisement in The Hindustan Times for the post of a Marketing Executive in a company. Write an application with a résumé to the Manager of the company. (Word limit: 120-150 words)

Q 8. How does 'The Last Lesson' highlight the importance of language and education in preserving one's identity and culture?" (Word limit: 120-150 words)

Q 9. How does poverty deprive children of their childhood in 'Lost Spring'?" (Word limit: 120-150 words)

Q 10. How does the poet capture the emotional conflict of separation and fear of losing her aging mother in 'My Mother at Sixty-Six'?" (Word limit: 120-150 words)

Q 11. "How does the story 'The Third Level' explore the theme of escapism and the conflict between illusion and reality?" (Word limit: 120-150 words)

Q 12. "How does Kalki use satire in 'The Tiger King' to criticize the abuse of power and superstitions in society?" (Word limit: 120-150 words)

## **HISTORY (027)**

1. **Who wrote the line "It seems to me a suicidal and indefensible policy to allow the country to be looted of original works of ancient art."?**
  - a. Walter Elliot
  - b. B.B. Lal
  - c. H.H. Cole
  - d. Collin Mackenzie
2. **Who was the first woman to be ordained as Bhikkuni ?**
  - a. Mahamaya
  - b. Dhannananda
  - c. Yashodhara
  - d. Mahapajapati Gotami
3. **Buddha's teachings are found mainly in which pitaka?**
  - a. Vinaya Pitaka
  - b. Tipitaka
  - c. Sutta Pitaka
  - d. Abhidhamma Pitaka
4. **'The nature of the self ' and ' The true sacrifice' are the two verses from \_\_\_\_\_?**
  - a. Chhandogya Upanishad
  - b. Kaushtaki Upanishad
  - c. Prasna Upanishad
  - d. Kena Upanishad
5. **Which of the following options is the most probable explanation for the incorporation of the 'Shailabhanjika' Motif in Sanchi Stupa?**
  - a. Strength and Wisdom
  - b. Auspicious Symbol
  - c. Religious Idol
  - d. Mahaparinibbana
6. **"A Cherry that will drop into our mouth one day" Who gave this statement?**
  - a. Lord Ripon'
  - b. Lord Dalhousie
  - c. Lord Irwin
  - d. Lord Wellsley
7. **If a ruler of a princely state died without a male heir, the state would be annexed by the British. This policy is known as .....**
  - a. Subsidiary Alliance
  - b. Sunset Law
  - c. Doctrine of Lapse
  - d. Summary Settlement
8. **Which of the following is not a political cause of Revolt of 1857?**
  - a. Doctrine of Lapse
  - c. Racial Discrimination

b. Subsidiary Alliance

d. Sunset Law

9. Who was the last Mughal Emperor of India?

a. Aurangzeb

b. Bahadur Shah Jafar

c. Jahangir

d. Shah Mal

10. Name the place where Nana Saheb led the Revolt of 1857.

a. Jhansi

b. Kanpur

c. Lucknow

d. Meerut

11. Who led the revolt from Bihar?

a. Bijris Qadar

c. Kunwar Singh

c. Todar Mal

d. Nana Saheb

12. Choose the correct statement regarding event of 1857.

a. Government Buildings were destroyed and plundered

b. The Sepoy captured the arms and ammunition

c. The telegraph line to Delhi was cut

d. All of above

13. Subsidiary Alliance was enforced in ..... year.

a. 1822

b. 1898

c. 1798

d. 1801

14. What was the immediate cause of Revolt of 1857?

a. Enfield Rifles

b. Cow Dust

c. Racial Discrimination

d. Doctrine of lapse

15. Identify the image:



A. Relief of Lucknow

C. The British Lion's Vengeance

B. In Memoriam

D. The clemency of Canning

16. The Commissioner of Lucknow collected the Christian population and took refuge in fortified residency. He was known as .....

- A. Henry Lawrence
- B. Colonel Inglis
- C. Colin Campbell
- D. Thomas Barker

**17. Who introduced Subsidiary Alliance?**

- a. Lord Ripon
- b. Lord Dalhousie
- c. Lord Irwin
- d. Lord Wellesley

**18. Which one of the following statements is the correct explanation of Polyandry?**

- a. Marriage outside the unit
- b. Marriage inside the unit
- c. A woman having several husbands.
- d. A man having several wives.

**19. How many verses are there in Mahabharata?**

- a. 10000
- b. 100000
- c. 120000
- d. 20000

**20. According to ....., the paternal estate was to be divided equally amongst sons after the death of the parents.**

- a. Varnas
- b. Manusmriti
- c. Mahabharat
- d. Dharmashastras

**21. Find the odd one:**

- a. Shudras, Vaishyas, kshatriyas, Army

**22. Ekalavya was a .....**

- a. Nishada
- (ii) priest
- (iii) Chandala
- (iv) Goldsmith

**23. Which of these Harappan sites is called as Centre of Ganeshwer – Jodhpur culture by the archaeologists?**

- a. Mohenjodaro
- B. Nageshwar
- C. Khetri
- D. Dholavira

**24. Match it**

- Archaeologists**
- A. Alexander Cunningham
  - B. Daya Ram Sahni
  - C. John Marshall
  - D. REM Wheeler

- Role**
- 1. Discovered seals at Harappa
  - 2. First Director General of ASI
  - 3. Brought a military precision
  - 4. the discovery of a new civilisation

**Codes**

- |    | A | B | C | D |
|----|---|---|---|---|
| A. | 2 | 1 | 4 | 3 |
| B. | 3 | 2 | 4 | 1 |

- |    | A | B | C | D |
|----|---|---|---|---|
| C. | 1 | 4 | 3 | 2 |
| D. | 4 | 1 | 2 | 3 |

**25. The first Director General of ASI was .....**

- A. REM Wheeler
- B. John Marshall
- C. Cunningham
- D. S.N Roy

**26. Match the following and select the correct option:**

**List-I**

**List II**

**(Harappan sites)**

- A. Lothal
- B. Kalibangan
- C. Dholavira
- D. Nageshwar

**Codes**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
A.	2	3	4	1
B.	3	2	4	1

**(Famous for)**

- 1. Specialised centres for making shell objects
- 2. Near sources of Carnelian
- 3. Evidences of ploughed field found
- 4. Water reservoirs found

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
C.	1	4	3	2
D.	4	1	2	3

**27. Match the following:**

**Sites**

- A. Dholavira
- B. Mohenjodaro
- C. Kalibangan
- D. Cholistan

**Codes:**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	3	4	2
2	4	3	1

**Evidence**

- 1. Great Bath
- 2. Terracotta Plough
- 3. Plough Field
- 4. Reservoir

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
4	1	3	2
3	2	1	4

**28. Which one of the following mature Harappan sites is located in Rajasthan?**

- A. Banawali
- B. Rakhigarhi
- C. Kalibangan
- D. Dholavira

**29. Identify the odd one out from the following options:**

- A. Brahaman- Studied Vedas
- B. Kshatriyas-Engaged in war
- C. Vaishya-Administrative Justice
- D. Shudras -served the other three varnas

**30. Which site provide evidence of specialised drills?**

- a. Chanhudaro
- b. Dholavira
- c. Lothal
- d. All of these

**31.** Discuss the distinctive features of domestic architecture of Mohenjodaro.

**32.** Throw light on the economic life and craft production of Harappan people.

**33.** Analyse the areas of Cunningham’s confusion in understanding the significance of Harappa.

**34.** Why do archaeologists and historians find Harappan script enigmatic? Explain reasons.

**35.** Locate the following sites on political map of India. (Do twice and paste in fair notebook)

- a. Dholavira
- b. Nageshwar
- c. Kalibangan
- d. Banawali
- e. Rakhigarhi

**36.** Discuss the burial practices in Harappan civilisation.

**37.** Write a short note on agricultural technologies in Harappan civilisation.

38. The mutinies of 1857 were well planned and coordinated. Explain.
39. Explain the causes of Revolt of 1857.
40. Rumours and prophecies circulated in North India played an important role in Revolt of 1857. Elucidate the statement with suitable examples.
41. Through proclamations the rebels of 1857 completely rejected everything associated with British Rule or Firangi Raj. Cite any four aspects to support this statement.
42. Examine the repressive measures adopted by British to subdue the rebels of 1857.
43. Write a short note on jatis in earlier societies.
44. Discuss in detail about the non-Kshatriya kings by giving an example of Goutami puta Sata - Kani
45. Mahabharat is a dynamic text. Explain.
46. Describe the familial relationship observed during Mahabharata era.
47. Mention any two features of gotra as per the Brahminical practice. What evidence do we get from the Satavahana inscriptions regarding the inheritance of gotra? Explain.
48. "The Mahabharata is a good source to study the Kinfolk's values of ancient times." Explain.
49. Discuss why and how were stupas built?
50. "Historians often try to understand the meaning of sculpture by comparing it with textual evidences." Evaluate the statement in context of Sanchi Stupa.

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## **POLITICAL SCIENCE (028)**

### **List of Topics**

- NAM - 1961 to present times.
2. Arab Spring meaning of this and causes of Arab Spring
  3. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.
  4. CIS - Central Asian Republics.
  5. Disintegration of USSR with special focus on Gorbachev.
  6. Cover the negative as well as positive aspects of relationship between India and the following countries.  
Focus on any one of the following (current updates should be highlighted):
    - a) Relationship between India and Russia
    - b) Relationship between India and China

- c) Relationship between India and Pakistan
- d) Relationship between India and Bangladesh

7. ASEAN

8. European Union and BREXIT.

9. BRICS.

10. SAARC.

11. India's Nuclear Policy.

12. United Nations with focus on India's candidature in Security Council.

13. UN Agencies - UNICEF, UNESCO, WHO.

14. Partition of India - Theory behind it and its legacy.

15. Comparison between NITI AAYOG and Planning Commission and their contribution in India's

16. What was the 'Bombay Plan'? State its primary objective regarding India's economic development.

17. Analyse the basic principles guiding India's Foreign Policy, with special reference to Non-Alignment and Panchsheel agreement

**Map 1 (World Map):** Locate the permanent member countries of the UN Security Council (UNSC) and the foundational member states of the European Union.

**Map 2 (Political Map of India):** Identify and label the states associated with major planning milestones and external border conflicts (e.g., Jammu & Kashmir, Arunachal Pradesh, Kerala—for its early planning models, and Gujarat).

- Project Work Guidelines
- Choose Politics and any Chapter of your book

**Politics in India since Independence**

**Contemporary world politics**

Instructions for Preparing the Project File

Length: The project work must contain 35–40 pages.

- Challenges of nation building (1to5)
- India's External Relations ( 6to10)
- Challenges to Restoration of the Congress System ( 11to 15)
- The Crisis of Democratic Order ( 16to 20)
- Regional Aspiration ( 21to25)

- Recent Developments in Indian Politics ( 26to30)
- Contemporary Centres of Power (31to35)
- Contemporary south Asia( 36to 40)
- International Organization ( 41 to 45)
- Security in the Contemporary world( 46 to 50)

## PSYCHOLOGY

### ASSIGNMENT - Chapter 1

#### **Section B ( 2 marks each)**

- Tripti is a psychologist. She administers a test that requires the subject to manipulate objects and other materials to perform a task. Name the type of intelligence test and state its importance.
- Explain the term 'assessment'.
- 'Intelligence by itself does not ensure creativity.' Do you agree with this statement? Give reasons and examples in support of your answer.
- What are the characteristics of the information processing approach to understanding intelligence?
- State the features of a normal curve with respect to intelligence quotient.
- There are individual differences in the level of creativity. How can we explain this variation in the potential for creativity?
- Is intelligence an interplay of nurture and nature? Support your answer with one evidence for each.
- Priya is very smart at solving any problem that she encounters. She refers to similar problems that she has faced in the past and uses her experience to solve the present ones. Which type of intelligence is she using and what theory is this based on?
- Angel, a psychologist, is analysing the intelligence scores of the children. She notices that the children from rural areas scored significantly lower than the children from urban areas. What do you think would have influenced the result of intelligence tests? Explain how she can overcome it.
- Briefly summarise the concept of situationism by giving an example.
- How is experiential intelligence seen in real life situations?
- Aditya has to interview a famous politician on a live TV show. Which is the most appropriate type of interview he can use?

#### **Section C( 3 marks each)**

- Mohit understands the motives, feelings and behaviours of other people and can develop a comfortable relationship with them. He also likes to travel as he recognises

the beauty of different species of flora and fauna Identify the types of intelligence that Mohit possesses in accordance with Gardner's theory. From the information provided about Mohit, explain any two other types of intelligence that Mohit may not be possessing.

- 'J.P. Guilford's structure-of-intellect model is a representation of a psychometric approach to understand intelligence.' Do you agree with this statement? State the reasons for the same and the characteristics of his theory.
- Akram loved his job but he was unhappy with his team leader. When Akram was approached with a better job offer, he recommended the name of his team leader who willingly accepted it. According to Sternberg, explain the type of intelligence Akram used to modify the environment.
- Dia wants to choose subjects in Grade XI in order to pursue a successful career later in life. Which psychological attributes will be assessed by the counsellor in order to help Dia make an informed choice? Give reasons for your answer.
- Kirti is of average intelligence but is high on ability to appraise, express and regulate her emotions. Identify the intelligence that she exhibits and why it is receiving so much attention these days. Suggest some ways to enhance this kind of intelligence of students in schools.
- Ryan and Shireen are siblings brought up in the same environment. Ryan knows all the formulae in mathematics and can recall them as they are but cannot solve problems based on those formulae, whereas Shireen can use formulae to solve any kind of problem that are based on them. Explain the intelligence they both exhibit. Which approach is this theory based on?
- Distinguish between psychometric approach and information-processing approach.
- Differentiate among verbal, non-verbal and performance tests.
- You have assessed twenty peers of your class for mathematical comprehension/knowledge. Create a distribution for the results that you are most likely to expect. What is the shape of the distribution?
- Explain the advantages and disadvantages of observation.
- Angad has been a topper in class. He went to the topmost college, where he was neither sensitive to his own self or to others. This led to problems in interpersonal relationships with reference to his condition. Explain the importance of emotional intelligence in his life.

#### **Section D( 4 marks each)**

- Vimal is brought up in a society which is technologically advanced. Explain the intelligence that is adopted by him. Is it likely to be tuned by the cultural factors? Give reasons for your answer.

- Sonam's intelligence tests reveal that she has exceptional general ability. Identify this variation of intelligence and its characteristics. How can the school help her reach her full potential?
- Explain the role of assessment in understanding psychological attributes. Describe the key features of any two methods used for psychological assessment.
- The cultural environment provides a context for intelligence to develop. How does the role of culture influence our understanding of intelligence? Explain.
- If we look around in our environment, we find that success is not associated with marks at school. There are many other types of intelligences. How will Gardner's theory of intelligences explain this. Describe his theory of multiple intelligences.
- Abira integrates different experiences in an original way to suggest novel solutions. According to Sternberg, she is high on which type of intelligence?
- Intelligence is the interdependent functioning of three neurological systems. Explain this theory.
- Explain the relationship between creativity and intelligence. State the important features of creativity tests.
- Shanta has an IQ of 140. She has recently won an award for the 'Best Author' as well. Will she be gifted or talented? Elaborate on giftedness and its characteristics.

#### **Section E( 6 marks each)**

- Explain briefly the multiple intelligences identified by Howard Gardner with the help of examples.
- Discuss the cultural differences in the conceptualisation of intelligence.
- Differentiate between information processing and psychometric approach to understand intelligence. Explain any four theories of psychometric approach.
- What is the relationship between creativity and intelligence? Differentiate between creativity tests and intelligence tests.
- What role does culture play in the conceptualisation of intelligence? Explain in the context of western and Indian cultures with the help of suitable examples.
- What is assessment? Explain any three methods of psychological assessment.

#### **ASSIGNMENT – CHAPTER – 3**

#### **Section B( 2 marks each)**

- Fatima communicates her feelings and views clearly with confidence. She could say 'no' to a request or state an opinion without being self-conscious. Which life skill is she using? Suggest two more life skills that can help Fatima meet the challenges of life successfully.

- Resham has been overwhelmed by the quantum of work in her office. She has been advised some stress management techniques by her counsellor. What are the two techniques that you think would be helpful for her to manage stress?
- 'An individual's response to a stressful situation largely depends upon the perceived events and how they are interpreted or appraised.' Do you agree with this statement with reference to Lazarus' theory? State a reason for your answer.
- Ranjan has faced a lot of mishaps in his life. However, he shows low levels of illness despite high levels of stress. What makes people like Ranjan resistant to stress?
- Neerav's parents have recently shifted to Bengaluru and have been busy settling him in the new city. Neerav misses his friends back in Nagpur and this has impacted his academic performance. What is the source of this stress? State the other sources of stress as well.
- Latika worked for a multinational company. She was shifting houses due to frequent transfers. During this time, she also lost her father to a major heart ailment. This caused a lot of stress. Explain this particular source of stress that Latika faced.
- Tahir is unable to decide whether to study dance or music as he likes both. Is he frustrated or facing a conflict? Explain very briefly.
- Explain the physiological effects of stress.
- What do you understand by creative visualization?
- What is burnout? Explain any one cause of burnout.
- Maninder is confident in saying 'no' to a request that he cannot fulfil. He is also able to organise his work and not procrastinate it. Explain the life skills exhibited by him.

### **Section C( 3 marks each)**

- Explain any three major effects of stress on psychological functioning.
- Describe any three life skills that can help a person meet life's challenges.
- How does an individual with a stress resistant personality cope with demands of everyday life? Give examples to support your viewpoint.
- Explain the relationship between stress and the immune system.
- What are cognitive behavioural techniques in the management of stress?
- Explain how life skills can help meet life challenges.
- Explain any four stress management techniques.

### **Section D( 4 marks each)**

- Mukesh encounters a snake while on a hike. Referring to the General Adaptation Syndrome (GAS), what is the pattern of his bodily response? State one criticism of Selye's theory.
- Individuals differ in the coping strategies that they use to deal with stressful situations. Justify this statement highlighting various coping strategies.

- Explain the effect of stress on the psychological functioning of an individual.
- To deal effectively with environment, the individuals must possess the right life skills. Explain any four of these life skills.
- Many ailments like hypertension, ulcers, etc. could be stress related. To prevent this from happening, we need to be aware about stress management techniques. Explain any four of these techniques.
- Explain the relationship between stress and illness. How does stress affect the immune system? Explain.
- Describe any four factors that facilitate positive health and act as stress buffers too.
- Explain the GAS model given by Selye. State the criticisms of this model.
- Explain the theory of cognitive appraisal as given by Lazarus.
- Explain the various sources of psychological stress giving suitable examples.
- Explain any four life skills that will enable students to deal effectively with the demands and challenges of everyday life.

**CLASS 12**  
**PRACTICE ASSIGNMENT**  
**CH-2,3,4,**

**Chapter: Matrices and Determinants**

1. Construct a matrix  $A = [a_{ij}]_{2 \times 2}$  whose elements  $a_{ij}$  are given by

a)  $a_{ij} = e^{2ix} \sin jx$ .    b)  $a_{ij} = \frac{(i-2j)^2}{2}$     c)  $a_{ij} = |-2i+3j|$

2. Show that a matrix which is both symmetric and skew symmetric is a zero matrix.

3. If  $X = \begin{bmatrix} 3 & 1 & -1 \\ 5 & -2 & -3 \end{bmatrix}$  and  $Y = \begin{bmatrix} 2 & 1 & -1 \\ 7 & 2 & 4 \end{bmatrix}$ , find a matrix  $Z$  such that  $X + Y + Z$  is a zero matrix.

4. Find values of  $a$  and  $b$  if  $A = B$  where  $A = \begin{bmatrix} a+4 & 3b \\ 8 & -6 \end{bmatrix}$  and  $B = \begin{bmatrix} 2a+2 & b^2+2 \\ 8 & b^2-5b \end{bmatrix}$ .

5. Find the value of  $x$  if  $\begin{bmatrix} 1 & x & 1 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = O$

6. If  $A = \begin{bmatrix} 1 & 3 & 2 \\ 2 & 0 & -1 \\ 1 & 2 & 3 \end{bmatrix}$ , then show that  $A$  satisfies the equation  $A^3 - 4A^2 - 3A + 11I = O$ .

7. Let  $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$ , then show that  $A^2 - 4A + 7I = O$ . Using this result calculate  $A^5$  also.

8. If  $A = \begin{bmatrix} 3 & -5 \\ -4 & 2 \end{bmatrix}$ , then find  $A^2 - 5A - 14I$ . Hence obtain  $A^3$ .

9. If the matrix  $\begin{bmatrix} 0 & a & 3 \\ 2 & b & -1 \\ c & 1 & 0 \end{bmatrix}$  is a skew symmetric matrix, find the values of  $a$ ,  $b$  and  $c$ .

10. If  $P(x) = \begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}$ , then show that  $P(x) \cdot P(y) = P(x+y) = P(y) \cdot P(x)$ .

11. If  $A = \begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$  and  $A^{-1} = A'$ , find the value of  $\alpha$ .

12. Find the matrix  $A$  satisfying the following equations:

a)  $\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

b)  $\begin{bmatrix} 4 \\ 1 \\ 3 \end{bmatrix} A = \begin{bmatrix} -4 & 8 & 4 \\ -1 & 2 & 1 \\ -3 & 6 & 3 \end{bmatrix}$

c)  $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 & -10 \\ 1 & -2 & -5 \\ 9 & 22 & 15 \end{bmatrix}$

13. If  $A = \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$ , then show that  $A^2 = \begin{bmatrix} \cos 2\theta & \sin 2\theta \\ -\sin 2\theta & \cos 2\theta \end{bmatrix}$

14. If  $A = \begin{bmatrix} 1 & 5 \\ 7 & 12 \end{bmatrix}$  and  $B = \begin{bmatrix} 9 & 1 \\ 7 & 8 \end{bmatrix}$ , find a matrix  $C$  such that  $3A + 5B + 2C$  is a null matrix

15. Show that  $A'A$  and  $AA'$  are both symmetric matrices for any matrix  $A$ .

16. Express the following matrices as sum of a symmetric and skew-symmetric matrices

a)  $\begin{bmatrix} 2 & 3 & 1 \\ 1 & -1 & 2 \\ 4 & 1 & 2 \end{bmatrix}$       b)  $\begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$

17. Give an example of matrices  $A$ ,  $B$  and  $C$  such that  $AB = AC$ , where  $A$  is nonzero matrix, but  $B \neq C$ .

18. Show by an example that for  $A \neq O$ ,  $B \neq O$ ,  $AB = O$ .

19. Find inverse of the following matrices, if exists.

a)  $\begin{bmatrix} 2 & -1 & 3 \\ -5 & 3 & 1 \\ -3 & 2 & 3 \end{bmatrix}$       b)  $\begin{bmatrix} 2 & 3 & -3 \\ -1 & -2 & 2 \\ 1 & 1 & -1 \end{bmatrix}$       c)  $\begin{bmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{bmatrix}$

20. Evaluate a)  $\begin{vmatrix} a+ib & c+id \\ -c+id & a-ib \end{vmatrix}$       b)  $\begin{vmatrix} \cos 15^\circ & \sin 15^\circ \\ \sin 75^\circ & \cos 75^\circ \end{vmatrix}$       c)  $\begin{bmatrix} 1 & -3 & 2 \\ 4 & -1 & 2 \\ 3 & 5 & 2 \end{bmatrix}$       d)  $\begin{bmatrix} 0 & 2 & 6 \\ 1 & 5 & 0 \\ 3 & 7 & 1 \end{bmatrix}$

21. Find  $x$  if  $\begin{vmatrix} 3 & x \\ x & 1 \end{vmatrix} = \begin{vmatrix} 3 & 2 \\ 4 & 1 \end{vmatrix}$

22. Find the value of  $k$  such that the points are collinear

- a)  $A(-3, 7)$ ,  $B(7, k)$  and  $(2, 1)$ .  
 b)  $A(1, -5)$ ,  $B(-4, 5)$  and  $(k, 7)$ .

23. Find the area of the triangle whose vertices are  $A(11, 7)$ ,  $B(5, 5)$  and  $C(-1, 3)$

24. Compute  $A^{-1}$  for the matrix  $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$

$$y + 2z + 8 = 0$$

Hence solve the system of equations:  $x + 2y + 3z + 14 = 0$

$$3x + y + z + 8 = 0$$

25. Find  $A^{-1}$  for the matrix  $A = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix}$  and show that  $A^{-1} = \frac{A^2 - 3I}{2}$

26. Using matrix method solve the following system of equations:

a)  $6x - 9y - 20z = -4$        $2x + y + z = 1$        $3x + 2y - 2z = 3$   
 b)  $4x - 15y + 10z = -1$        $x - 2y - z = \frac{3}{2}$       c)  $x + 2y + 3z = 6$   
 $2x - 3y - 5z = -1$        $3y - 5z = 9$        $2x - y + z = 2$

27. If  $A = \begin{bmatrix} 1 & 2 & 0 \\ -2 & -1 & -2 \\ 0 & -1 & 1 \end{bmatrix}$ , find  $A^{-1}$ . Using  $A^{-1}$  solve the system of equations

$$x - 2y = 10, \quad 2x - y - z = 8, \quad -2y + z = 7.$$

28. Use product  $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix} \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$  to solve the system of equations  
 $x - y + 2z = 1, 2y - 3z = 1, 3x - 2y + 4z = 2$

29. Given  $A = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ , find BA and use this to solve the system of equations  $y + 2z = 7, x - y = 3, 2x + 3y + 4z = 17$

30. Prove that  $(A^{-1})' = (A')^{-1}$ , where A is an invertible matrix.

31. Show that the points  $(a + 5, a - 4), (a - 2, a + 3)$  and  $(a, a)$  do not lie on a straight line for any value of a.

32. The sum of three numbers is 6. If we multiply third number by 3 and add second number to it, we get 11. By adding first and third numbers, we get double of the second number. Represent it algebraically and find the numbers using matrix method.

33. If A and B are invertible matrices, then prove that  $(AB)^{-1} = B^{-1}A^{-1}$ .

34. If  $A = \begin{bmatrix} 3 & 1 \\ 2 & -3 \end{bmatrix}$ , find  $|adj A|$  and  $|A adj A|$ .

35. If  $A = \begin{bmatrix} 1 & -2 & 3 \\ 0 & -1 & 4 \\ -2 & 2 & 1 \end{bmatrix}$ , find  $(A^T)'$ . (Ans:  $\begin{bmatrix} -9 & -8 & -2 \\ 8 & 7 & 2 \\ -5 & -4 & -1 \end{bmatrix}$ )

### Chapter: Relations and Functions

36. Let  $A = \{1, 2, 3, \dots, 9\}$  and R be the relation in  $A \times A$  defined by  $(a, b)R(c, d)$  if  $a + d = b + c$  for  $(a, b), (c, d) \in A \times A$ . Prove that R is an equivalence relation and also obtain the equivalence class  $[(2, 5)]$  and  $[(1, 3)]$ .

37. Show that the relation R on the set Z of all integers defined by  $(x, y) \in R \Leftrightarrow (x - y)$  is divisible by 3 is an equivalence relation.

38. Let N be the set of all natural numbers and let R be a relation on  $N \times N$ , defined by  $(a, b)R(c, d) \Leftrightarrow ad = bc$  for all  $(a, b), (c, d) \in N \times N$ . Show that R is an equivalence relation. Also, find the equivalence class  $[(2, 6)]$ .

39. Let N be the set of all natural numbers and let R be a relation on  $N \times N$ , defined by  $(a, b)R(c, d) \Leftrightarrow ad(b + c) = bc(a + d)$  for all  $(a, b), (c, d) \in N \times N$ . Show that R is an equivalence relation. Also, find the equivalence class  $[(2, 6)]$ .

40. Let R be the equivalence relation in the set  $A = \{0, 1, 2, 3, 4, 5\}$  given by  $R = \{(a, b) : 2 \text{ divides } (a - b)\}$ . Write the equivalence class  $[0]$ .

41. Let  $A = [-1, 1]$ . Then discuss whether the following functions defined on A are one-one onto or bijective.

a)  $f(x) = \frac{x}{2}$

b)  $g(x) = |x|$

c)  $h(x) = x|x|$

d)  $k(x) = x^2$

42. Check whether following functions are one-one onto or not?

(i)  $f(x) = \frac{x}{x^2+1}$ ,  $f: R \rightarrow R$     (ii)  $f(x) = \cos x$     (iii)  $f(x) = 9x^2 + 6x - 5$ ,  $f: R_+ \rightarrow [-5, \infty)$

iv)  $f(x) = 5x^2 + 6x - 9$ ,  $f: R_+ \rightarrow [-9, \infty)$  ( $R_+$  is the set of all non-negative real numbers)

v)  $f(x) = 4x^2 + 12x + 15$ ,  $f: N \rightarrow S$  where  $S$  is the range of  $S$

43. Show that  $f: N \rightarrow N$  given by  $f(x) = \begin{cases} x+1, & \text{if } x \text{ is odd} \\ x-1, & \text{if } x \text{ is even} \end{cases}$  is both one-one and onto.

44. Find the number of all one-one functions from set  $A = \{a, b, c\}$  to itself.

### Chapter: Inverse Trigonometric Functions

45. Find the principal value of  $\tan^{-1}\left(\tan \frac{7\pi}{6}\right)$  (Ans:  $\frac{\pi}{6}$ )

46. Find the principal values of i)  $\tan^{-1}\left(\tan \frac{9\pi}{8}\right)$  ii)  $\cot^{-1}\left(-\frac{1}{\sqrt{3}}\right)$  iii)  $\sec^{-1}\left(\sec \frac{9\pi}{5}\right)$

47. Evaluate:  $\sin\left(\cot^{-1}\left(\cot \frac{17\pi}{3}\right)\right)$ . (Ans:  $\frac{\sqrt{3}}{2}$ )

48. Find the domain of the following functions:

a)  $\sin x + \sin^{-1} x$

b)  $\cos^{-1}(3x-2)$

49. Evaluate: i)  $\sin^{-1}(\sin 10)$  ii)  $\sin^{-1}(\sin 5)$  iii)  $\cos^{-1}(\cos 10)$

50. Find the principal value of  $\cot^{-1}(-\sqrt{3}) + \tan^{-1}(1) + \sec^{-1}\left(\frac{2}{\sqrt{3}}\right)$ . (Ans:  $\frac{5\pi}{4}$ )