

2025
DEFENCE SERVICES ACADEMY
ENTRANCE EXAMINATION
ENGLISH QUESTION
SAMPLE QUESTION

Time Allowed: 2 Hours

ANSWER ALL QUESTIONS.

I. Read the passage.

Next comes the school as an institution to impart good manners. Almost all children not only learn the school subjects their teachers teach but also imitate the teachers' manners and behavior. In a school where teachers are good role models, students learn to be polite and respectful. In addition, they are quite likely to take their classmates and senior students to be role models; and here is the danger of acquiring all ill manners.

As we all know, teenagers and young adults are very often influenced by celebrities, films and the type of books and articles they read. Hence, they are quite likely to be misled and thereby acquire ill manners and negative views. There is still another institution that imparts manners: the work domain. Once a person gets a job, his work domain becomes an added institution to influence him, for good or evil.

To put it in a nutshell, the current generation as a whole is the most powerful and most responsible institution for the imparting of good manners. The modeling of society is no easy task. All the elders of this generation should conscientiously join hands and teach their juniors to be law-abiding, upright, honest, self-respecting, disciplined, punctual, charitable, helpful, merciful, and forgiving. The quality of the next generation is in the hands of the present generation. As a matter of fact, we are mutually responsible for building a well-mannered society.

(A) Write the correct word or words to complete each sentence. (5 marks)

1. _____ is one of the places where good manners are imparted to children.
2. Apart from _____ the school subjects, children imitate the teachers' manners and behavior.
3. The two things that students learn from their teachers as good role models are _____ and respect.
4. The type of books and articles teenagers and young adults read often _____ them.
5. _____ also influences a person for good or evil when he or she gets a job.

(B) Answer the following questions in complete sentences. (10 marks)

6. What will happen if a student is likely to take his or her classmate or senior student to be his or her role model?
7. For imparting good manners, who is the most responsible?
8. What can the elders impart their juniors?
9. What does the quality of the next generation depend on?
10. What is the main idea of the passage?

II. Choose the appropriate words or phrases to complete the sentence. (20 marks)

1. All passengers _____ wear seat belts when they are in a car or plane.
A. have to B. will have to C. must
2. I brought the dictionary _____ Nilar wanted.
A. that B. who C. whose
3. Doctors are _____ for the care and well-being of patients.
A. responsible B. knowledgeable C. liable
4. I'm _____ that you can't come to my birthday party.
A. disappointing B. disappointed C. disappoint
5. My father was really angry _____ me for teasing my younger sister.
A. at B. with C. for

6. The flight was cancelled _____ the weather was bad.
A. because B. while C. where
7. The rector observed the students _____ an experiment in the laboratory.
A. doing B. do C. having done
8. We're very tired because we (walk) around all the morning.
A. walked B. were walking C. have been walking
9. I _____ my new job till next Monday.
A. will not starting B. will not be starting C. am not starting
10. By the end of the year, I _____ with the company for twenty years.
A. had worked B. have been working C. will have been working

III. Rewrite the sentence according to the instructions given in brackets. (20 marks)

1. He will decorate the inside of the room. He will paint the outside of the room. (Join the sentences, using 'not only....but also' in inversion order)
2. My nephew has earned the highest score in the pilot test. (Use 'It is/ It was..who/that...')
3. He dropped the gun. He raised his hands in the air. (Join the sentences, using a participle phrase)
4. I want to donate much money to the poor but I am not rich. (Rewrite the sentence, using the second conditional)
5. Mother said to me, "What is it that makes you so much stronger and braver than any other man?" (Turn the sentence into indirect speech)
6. He can't help smoking, even though he knows it's not good for his health. (Join the sentences, using "No matter how...")
7. The special guest did not turn up. We invited him to our intake charity. (Join the sentences, using the relative pronoun)
8. The company was not resilient enough to overcome the economic downfall. (Rewrite the sentence, using 'too.....to')
9. Americans worry that the distribution of income is increasingly unequal. (Rewrite the sentence, using 'impersonal passive')
10. Although there were early warnings about the approaching storm, the fisherman went ahead as planned. (Use 'In spite of')

IV. Answer the questions in complete sentences. (30 marks)

1. Why are communication skills important in our social dealings?
2. Why are forests beneficial to us?
3. How do you understand 'a white lie'? Give an example of your own.
4. How are AI tools used in space exploration?
5. Why did Japanese colleagues avoid saying 'no' directly to Megan when she asked for some suggestions on her lecture?
6. Why do advisers choose bright and cheerful colours?
7. What has led to a more diverse community in the 21st Century World?
8. Why should the goals of schools and universities include the promotion of effective communication?
9. Where did Annie want to live with Helen? Why?
10. What are the drawbacks of using hydropower?

V. Write an essay on ONE of the following. Do not write more than 500 words. (15 marks)

Good study habits

(OR)

Why we should encourage people with disabilities

(OR)

Technology has more advantages than disadvantages

DEFENCE SERVICES ACADEMY
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MATHEMATICS
SAMPLE QUESTION

Date: - -2025

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ANSWER ALL QUESTIONS

PART (A)

1. Choose the correct or the most appropriate answer for each question. Write the letter of the correct or the most appropriate answer. **(20 Marks)**

- (1) If $z_1 = 1 - 3i$, $z_2 = -3 - bi$ and $z_1 \bar{z}_2 = 9 + 13i$, then b is
A. 1 B. 2 C. 3 D. 4 E. 5
- (2) The distance between two points $(-1, 2, 5)$ and $(1, 1, 6)$ is
A. $\sqrt{2}$ B. $\sqrt{5}$ C. $\sqrt{6}$ D. $\sqrt{13}$ E. $\sqrt{3}$
- (3) If P is $(-3, 2, 3)$ and Q is $(1, -1, 3)$, then $|\overline{PQ}|$ is
A. 3 B. 4 C. 5 D. -5 E. -4
- (4) In how many ways can all the letters of the word PENCIL be arranged, without repeating any letters?
A. 270 B. 360 C. 120 D. 720 E. 780
- (5) The equation of parabola $x^2 + 4x + 4y = 0$ has vertex
A. $(-2, 1)$ B. $(-2, 0)$ C. $(-4, 0)$ D. $(2, -1)$ E. $(1, -2)$
- (6) $\sin \left(\cos^{-1} \frac{\sqrt{3}}{2} \right) =$
A. $\sqrt{3}$ B. -2 C. $\frac{1}{2}$ D. $\frac{\sqrt{3}}{2}$ E. 2
- (7) The equation of the asymptote of the graph of the function $y = -3^{x-4} - 2$ is
A. 2 B. -2 C. 3 D. -4 E. 4
- (8) The sum of the global minimum and global maximum values of the function $f(x) = x^2 - 4x + 2$ on $[-3, 5]$ is
A. 30 B. 23 C. 25 D. 21 E. 20
- (9) $\int (1 + \tan^2 x) dx =$
A. $\sec^2 x + c$ B. $\cot x + c$ C. $\tan x + c$ D. $\tan^2 x + c$ E. $\csc^2 x + c$
- (10) Evaluate the integral $\int_0^6 \left(\frac{1}{3}x - 1 \right)^3 dx$
A. 6 B. -1 C. 1 D. $\frac{3}{4}$ E. 0

PART (B)

2.(a) Find the cube roots of the complex number $z = -i$. **(8 marks)**

(b) Use the mathematical induction principle to prove that

$$1^3 + 2^3 + 3^3 + \dots + n^3 = \left(\frac{n(n+1)}{2} \right)^2, \text{ for all natural number 'n'}. \quad \textbf{(8 marks)}$$

3.(a) Find the equation of the line passing through the point $(-4, 7, -3)$ and perpendicular to the line $(x, y, z) = (3 + 2k, -1 + 3k, 1 - k)$. Find also the point of intersection of two lines. **(8 marks)**

(b) Find the area of triangle PQR with the vertices P $(1, -1, 3)$, Q $(0, 4, 1)$ and R $(2, 7, 2)$. **(8 marks)**

4.(a) A registration code consists of two of 12 different capital letters A, B, C, ..., L, followed by one of the ten digits 0, 1, 2, ..., 9, for example ID5. How many codes are possible to generate: **(8 marks)**

(i) If the repetition of the letters is allowed?

(ii) If the repetition of the letters is not allowed?

(iii) If two letters in the codes must be same?

(iv) If two letters are different, but must be both vowels or both consonants?

(b) Write the given equation $y^2 + 6y + 8x + 25 = 0$ in standard form. Sketch its graph, showing the vertex, focus, directrix and endpoints of latus rectum. **(8 marks)**

5.(a) Prove that $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$. **(8 marks)**

(b) Use logarithmic differentiation to find the derivative of $y = \sqrt{x(x+1)}$, with respect to x . **(8 marks)**

6.(a) Find and classify the critical points of $f(x) = x^5 - 5x + 5$. **(8 marks)**

(b) Evaluate each of the following integrals: **(8 marks)**

$$(i) \int (e^x + 2 \sin x) dx \quad (ii) \int \sqrt{8x-7} dx$$

$$(iii) \int x^2 \left(\frac{x^3}{3} + 1 \right)^3 dx \quad (iv) \int \frac{\sin 2x}{\sin x} dx.$$