DEFENCE SERVICES ACADEMY
2022-2023 ENTRANCE EXAMINATION
ENGLISH TEST
SAMPLE QUESTION

Time Allowed: 2 Hours

(Answer all questions.)

I. Read the passage.

Not quite comprehending what the great teacher meant, they looked one another, but said nothing, and after paying their respects to their professor, set forth on their journey home. After travelling for a number of days their dry rations ran out and the pot and the grain given to them by their professor came in very useful indeed.

"How thoughtful our great teacher is!" they felt and got down to the business of cooking themselves a meal. There was rice enough for all four of them all right, but they would have to do something about the curry.

So they drew lots for the different tasks to be carried out in order to get a decent meal. Thus, the man of music and dancing was to cook the rice. The medico was to buy meat and fish; the astrologer was to gather vegetables; and the philosopher was to get some ghee (which is clarified butter) to cook the curry in. And thus each set out to do his task.

(A) Write the correct word or words to complete each sentence. **(10 Marks)**

(1)   The four youths _____ well what their professor meant.

(2)   The four youths began their journey home after they _____ their respects to their professor.

(3)   _____was sufficient for the four youths but they needed to manage something about the curry.

(4)   To get a decent meal, _____were carried out by drawing lots.

(5)   Despite having enough rice, the youths needed _____for the curry.

(B) Answer each question in one sentence. **(10 Marks)**

(6)   Apart from looking at each other, what did the four youths say?

(7)   What happened to them after travelling for a number of days?

(8)   Why did the four youths feel that their great teacher was very thoughtful?

(9)   What was the astrologer's task?

(10)   What kind of butter was necessary for the philosopher to cook the curry in?

II. Fill in each numbered blank in the following paragraph with a word from the list given. Write down only the letter of your answer by the number. **(10 Marks)**

products	known	likely	doing	For
cause	to	diseases	these	per
obesity	which	alcohol	in	limit
and	unhealthy	This	clearly	fewer

In many countries, there are already laws ---(1)--- do not allow advertising for tobacco products. Some people now want to go further and ban advertisements for other ---(2)--- products such as alcohol ---(3)--- junk food. ---(4)--- is undoubtedly the right way forward for governments. There are strong arguments for banning TV advertising of these ---(5)---. The benefits of ---(6)---this greatly outweigh the disadvantages.

It is ---(7)--- desirable to ---(8)--- TV advertisements of fast food. It is widely ---(9)--- that the rate of ---(10)--- has increased significantly ---(11)--- western countries. ---(12)--- example, obesity is second only to smoking as a ---(13)--- of death in the United States. In that country, the food industry spends over $ 33 billion ---(14)--- year to advertise food products that are considered ---(15)--- be junk food.

PTO

Drinking ---(16)--- is also very unhealthy. It results in a wide range of ---(17)---. If children see ---(18)--- adverts on TV of people doing ---(19)--- activities, they are much less ---(20)--- to try to imitate their behavior.

III. (A) Choose the appropriate words to complete the sentences. **(10 Marks)**

(1) We ran _____ fuel on the way to our native village.

    A. in   B. on   C. out

(2) The company is going to stop _____ cars next year.

    A. produce   B. produced   C. producing

(3) She has worked in public health _____ through her career.

    A. servants   B. services   C. servicing

(4) The import of right-hand drive vehicles _____ since 2016.

    A. are limited   B. has been limited   C. is limited

(5) Whales _____ in the ocean.

    A. are finding   B. are found   C. find

(B) Give complete answers to the following questions. **(20 Marks)**

(1) Why did the four youths fail to carry out the different tasks?

(2) When and how can stars be seen on the moon?

(3) In which places are meat and vegetables kept in supermarket and why?

(4) How does the law protect human workers?

(5) What is meant by having a better life?

(6) How do people get relief from bad dreams?

(7) What is the key to the success for people with 'beauty handicaps?

(8) Where and when does dengue fever mainly occur?

(9) When and where was Helen Keller born?

(10) When and which institute did Captain Keller contact to get help for Hellen Keller?

IV. Finish each sentence in such a way that it means exactly the same as the sentence that is given. **(20 Marks)**

(1) When she saw a big snake on the way home, she screamed out.

    By the time_____.

(2) As soon as father left for work, his son started playing online game.

    No sooner _____.

(3) The staff did not inform the Chief Executive Officer about this issue.

    The Chief _____.

(4) Everyone has an opportunity to apply for this job.

    There is no _____.

(5) Su Su read the e-mail from her office and then forwarded it to her friend.

    After _____.

(6) He was absent for English Class. He did not have permission from the teacher.

    Without _____.

(7) Although she studied hard, she did not get English distinction.

    In spite of _____.

(8) Dr. Aung Min is well known for his contributions to alternative medicine. He is our family doctor.

    Dr. Aung Min, _____.

(9) If you do not attend the class regularly, you will miss the lecture.

    Unless _____.

(10) Thiha said to his sister, "What happened to you?"

    Thiha asked _____.

V. Write an essay of three paragraphs on ONE of the following. Do not write more than 500 words. **(20 Marks)**

Save Trees, Save Life
(OR)
Exercise is medicine
(OR)
Knowledge, Skills and Attitude for Today's Youths

Time Allowed: 2 Hours

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. **(22 Marks)**

(1) Functions f and g are given by $f(3)=-1$ and $g(-1)=5$. Then $(g \circ f)^{-1}(5)=$

   A. -1 B. 3 C. 4 D. 5 E. 0

(2) When $(2x+k)^{2019}+(x-1)^2$ is divided by $x+1$, the remainder is 5, then $k=p$

   A. -1 B. 1 C. -3 D. 6 E. 3

(3) If $^nC_2=66$, then $n=$

   A. 9 B. 10 C. 11 D. 12 E. 13

(4) The product of the A.M. and G.M. between 4 and 16 is

   A. 40 B. 60 C. 70 D. 80 E. 160

(5) Let $A=\begin{pmatrix} 1 & 2 \\ 0 & 4 \end{pmatrix}$ be a matrix and given that $\det(xA)=4$. Then $x=$

   A. 0 B. ± 1 C. ± 2 D. 3 E. 4

(6) If A is an event such that $6[P(A)]^2=P(\text{not } A)$, then $P(A)=$

   A. $\dfrac{1}{2}$ B. $\dfrac{1}{3}$ C. $\dfrac{1}{6}$ D. $\dfrac{2}{3}$ E. none of these

(7) Chords AB and CD of a circle intersect at P within the circle. If $AP=5$, $PB=2, CP=x$ and $PD=x+3$, then $x=$

   A. 2 B. 3 C. 4 D. 5 E. 6

(8) The areas of two similar triangles are in the ratio $4:9$. One side of the smaller triangle is 4. The corresponding side of the other triangle is

   A. 2 B. 3 C. 4 D. 5 E. 6

(9) If $\vec{a}, \vec{b}$ are non-parallel and non-zero such that $(3x+y)\vec{a}+(y-3)\vec{b}=\vec{0}$, then $x=$

   A. 1 B. -1 C. 3 D. -3 E. none of these

(10) What is the smallest value of x for which $\tan 3x=-1$?

   A. $15°$ B. $45°$ C. $75°$ D. $90°$ E. $105°$

(11) If $f(x)=4x^2+e^{-3x}$, then $f''(0)=$

   A. -17 B. 8 C. 17 D. -8 E. -3

P.T.O. ⟶

PART (B)

2. (a) Functions $f : R \rightarrow R$ and $g : R \rightarrow R$ are defined by $f(x) = 2x - 1$ and $g(x) = 4x + 3$. Find the value of x for which $(f^{-1} \circ g)(x) = (g^{-1} \circ f)(x) + 6$.

   (6 marks)

   (b) The expression $x^3 + ax^2 + bx + 3$ is exactly divisible by $x + 3$ but it leaves a remainder of 91 when divided by $x - 4$. What is the remainder when it is divided by $x + 2$? **(7 marks)**

3. (a) In the expansion of $(1 - 2x)^n$, the sum of the coefficients of x and x^2 is 16. Given that n is positive, find the value of n and the coefficient of x^3.

   (6 marks)

   (b) Use a graphical method to find the solution set of the inequation $2x(x - 1) < 3 - x$ and illustrate it on the number line. **(7 marks)**

4. (a) The product of first three terms of a G.P. is 1000. If we add 6 to its second term, 7 to its third term and its first term is not changed, then three terms form an A.P.. Find the first three terms of the G.P.. **(6 marks)**

   (b) Find the inverse of the matrix $A = \begin{pmatrix} 3 & 5 \\ 1 & 2 \end{pmatrix}$ and investigate whether or not the squares of A and A^{-1} are inverses of each other. **(7 marks)**

5. (a) How many 3-digit numerals can you form from $3, 0, 1$ and 6 without repeating any digit? Find the probability of an even number and find the probability that a numeral which is divisible by 3. **(6 marks)**

   (b) PQR is a triangle in which $PQ = PR$. S is a point inside the triangle such that $\angle SPQ = \angle SQR$. T is the point on QS such that $PT = PS$. Prove that $PQRT$ is cyclic. **(7 marks)**

6. (a) P, Q, R, S are four points in order on a circle O, so that PQ is a diameter. PS and QR meet at T. If $\alpha(PQRS) = 3\alpha(\Delta TRS)$, prove that $\angle ROS = 60^\circ$.

   (6 marks)

   (b) Find the matrix which will translate through 3 units horizontally and 1 unit vertically followed by a rotation through 45°, and find the map of the point $(1, 2)$. **(7 marks)**

7. (a) If $x + y + z = \pi$, prove that $\sin 2x + \sin 2y + \sin 2z = 4 \sin x \sin y \sin z$.

   (6 marks)

   (b) If the perimeter of a rectangle is $24 \, m$, show that the area is the greatest when this rectangle is a square and find the maximum area. **(7 marks)**