# INDUS RANGERS DEFENCE ACADEMY

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**IMU – CET [WEEKLY TEST]**
**PRACTICE SHEET – 2**

**General Instructions:**

- There are 40 questions
- All questions have 4 marks for correct and –1 mark for wrong answer as a penalty.
- The name, date, and exam must be filled in OMR sheet otherwise the result will not be published.
- OMR fill should be properly.

## [ENGLISH]

1. A match made in heaven
   (a) a marriage that is solemnized formally
   (b) a marriage that is unsuccessful
   (c) a marriage that is likely to be happy and successful
   (d) a marriage of convenience
2. A culture vulture
   (a) someone who is very keen to experience art and literature
   (b) someone who wants to defend ancient culture
   (c) someone who is ashamed of one's own culture
   (d) someone who looks at her/his culture critically
3. A death blow
   (a) to be nearly dead
   (b) to be deeply afraid of death
   (c) to beat someone to death
   (d) an action or event which causes something to end or fail
4. The jewel in the crown
   (a) someone who has many skills
   (b) something that one wants
   (c) the most valuable thing in a group of things
   (d) the jewel in the crown of the king
5. To live in a fool's paradise
   (a) to live a life that is dishonest
   (b) to be happy because you will not accept how bad a situation really is
   (c) to believe that things you want will happen
   (d) to enjoy yourself by spending a lot of money
6. A rotten apple
   (a) to remove something which is rotten
   (b) one bad person in a group of good people
   (c) a loving and kind person
   (d) a disorganized person with bad habits

7. To vote with your feet
   (a) to show that you do not support something
   (b) to replace something important
   (c) to change something you must do
   (d) to express a particular opinion
8. Verbal diarrhoea
   (a) to be sick
   (b) to talk too much
   (c) to be in a different situation
   (d) to be a good orator
9. To sail close to the wind
   (a) to pretend to be something that you are not
   (b) to be in some unpleasant situation
   (c) to be destroyed by a belief
   (d) to do something that is dangerous
10. A double entendre
   (a) to look at someone or something twice
   (b) a situation in which you cannot succeed
   (c) a word which has two meanings
   (d) something that causes both advantages and problems

# [MATHEMATICS]

11. If z is a complex number such that $z + z^{-1} = 1$, then what is the value of $z^{99} + z^{-99}$?
   (a) 1 (b) – 1 (c) 2 (d) – 2
12. What is the value of $\left(\frac{i+\sqrt{3}}{-i+\sqrt{3}}\right)^{200} + \left(\frac{i-\sqrt{3}}{i+\sqrt{3}}\right)^{200} + 1$?
   (a) – 1 (b) 0 (c) 1 (d)2
13. If $\omega$ is a complex cube root of unity and $x = \omega^2 - \omega - 2$, then what is the value of $x^2 + 4x + 7$?
   (a) – 2 (b) – 1 (c) 0 (d) 1
14. If $x^2 + y^2 = 1$, then what is $\frac{1+x+iy}{1+x-iy}$ equal to?
   (a) x – iy (b) x + iy (c) 2x (d) – 2iy
15. What is the modulus of $\left|\frac{1+2i}{1-(1-i)^2}\right|$ ?
   (a) 1 (b) $\sqrt{5}$ (c) $\sqrt{3}$ (d) 5
16. What is the least positive integer n for which $\left(\frac{1+i}{1-i}\right)^n = 1$?
   (a) 16 (b) 12 (c) 8 (d) 4

17. What is the conjugate of $\left(\frac{1+2i}{2+i}\right)^2$?

(a) $\frac{7}{25}+i\frac{24}{25}$ (b) $-\frac{7}{25}-i\frac{24}{25}$ (c) $-\frac{7}{25}+i\frac{24}{25}$ (d) $\frac{7}{25}-i\frac{24}{25}$

18. What is $\left(\frac{\sqrt{3}+i}{\sqrt{3}-i}\right)^6$ equal to?

(a) $-1$ (b) 0 (c) 1 (d) 2

19. If $\omega$ is a complex cube root of unity, then what is $\omega^{10}+\omega^{-10}$ equal to?

(a) 2 (b) $-1$ (c) 1 (d) 2

20. What is the value of $\left(-1+i\sqrt{3}\right)^{48}$?

(a) 1 (b) 2 (c) $2^{24}$ (d) $2^{48}$

# [REASONING]

**DIRECTIONS: The letters of the word have been jumbled and numbered. Select the option from the given choices that represents the correct sequence to form a meaningful word using these letters.**

21.

| C, | R, | O, | E, | N, | D, | I, | S |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

(a) 1, 2, 3, 4, 5, 6, 7, 8 (b) 8, 7, 6, 5, 4, 3, 2, 1

(c) 1, 3, 2, 6, 7, 8, 5, 4 (d) 1, 3, 5, 8, 7, 6, 4, 2

22.

| E, | C, | I, | P, | A, | R, | C, | T |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

(a) 5, 2, 1, 8, 4, 3, 7, 6 (b) 4, 1, 3, 2, 8, 6, 7, 5

(c) 5, 1, 2, 3, 7, 8, 6, 4 (d) 4, 6, 5, 7, 8, 3, 2, 1

23.

| A, | A, | C, | H, | O, | P, | R, | P |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

(a) 7, 3, 5, 1, 6, 2, 8, 4 (b) 3, 7, 5, 8, 1, 2, 4, 6

(c) 7, 5, 3, 1, 4, 6, 2, 8 (d) 1, 6, 8, 7, 5, 2, 3, 4

24.

| H, | E, | S, | T, | B, | A, | I, | L, | S |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

(a) 5, 4, 3, 9, 1, 7, 6, 2, 8 (b) 2, 3, 4, 6, 5, 8, 7, 9, 1

(c) 4, 5, 8, 7, 6, 2, 3, 9, 1 (d) 6, 4, 2, 8, 7, 3, 1, 4, 9

25.

| N, | O, | C, | U, | D, | C, | T |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

(a) 3, 2, 1, 5, 4, 6, 7 (b) 7, 5, 3, 4, 6, 1, 2

(c) 5, 3, 4, 7, 1, 6, 2 (d) 7, 3, 5, 4, 6, 2, 1

26.

| A, | A, | C, | I, | I, | F, | N, | N, | L |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

(a) 6, 5, 7, 1, 8, 3, 4, 2, 9
(b) 4, 9, 1, 3, 2, 8, 6, 7, 5
(c) 5, 1, 2, 3, 7, 8, 6, 4, 9
(d) 2, 5, 1, 8, 7, 3, 4, 6, 9

27.

| A, | M, | O, | J, | I, | R, | Y, | T |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

(a) 2, 1, 4, 3, 6, 5, 8, 7
(b) 3, 7, 5, 8, 1, 2, 4, 6
(c) 7, 5, 3, 1, 4, 6, 2, 8
(d) 5, 1, 3, 4, 2, 7, 6, 8

28.

| B, | H, | M, | U, | E, | L |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

(a) 5, 4, 3, 1, 6, 2
(b) 4, 5, 6, 2, 3, 1
(c) 2, 4, 3, 1, 6, 5
(d) 6, 4, 2, 3, 1, 4

29.

| C, | H, | E, | E, | M, | S |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

(a) 5, 4, 3, 6, 2, 1
(b) 6, 1, 2, 4, 5, 3
(c) 5, 3, 4, 1, 6, 2
(d) 3, 5, 4, 6, 2, 1

30.

| A, | E, | G, | I, | N, | N, | O, | R, | S |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

(a) 1, 4, 6, 5, 2, 3, 8, 9, 7
(b) 4, 2, 6, 3, 1, 5, 9, 8, 7
(c) 8, 2, 1, 9, 7, 6, 4, 5, 3
(d) 9, 8, 5, 2, 4, 3, 6, 1, 7

# [PHYSICS]

31. If the two identical conductors on which charges $q_1$ and $q_2$ respectively. They are replacing after contact then the charge on each conduct.
(a) $\frac{q_1-q_2}{2}$
(b) $\frac{q_1+q_2}{2}$
(c) $2q_1q_2$
(d) $\frac{q_1}{q_2}$

32. There are two charges t1 sec and t5 sec the ratio of the forces acting on them will be
(a) 1 : 5
(b) 5 : 1
(c) 1 : 1
(d) None of these

33. The unit of permittivity of free space is
(a) $\frac{c^2}{NM^2}$
(b) $\frac{Farad}{Meter}$
(c) $\frac{Ampere^2Sec^2}{Kg\ Meter^3}$
(d) All of these

34. 1 KeV =?

(a) $10^6$ eV (b) $10^{-3}$ eV

(c) $10^5$ eV (d) None of these

35. Which of the following is the dimensional formula of an E.F.

(a) [LTA] (b) $[ML^3T^{-3}A^{-2}]$

(c) $[ML^{-3}A^{-1}]$ (d) None of these

36. The value of $\frac{1}{4\pi\epsilon_o}$ is

(a) $9 \times 10^9 \frac{C^2}{NM^2}$ (b) $9 \times 10^{-9} \frac{NM^2}{C^2}$

(c) $19 \times 10^9 \frac{NM^2}{C^2}$ (d) None of these

37. A charged body A attracts other body B then the body is –

(a) Charged (b) Neutral

(c) Both (d) None of these

38. How many electrons in one coulomb of charge–

(a) $6.25 \times 10^{18}$ $e^-$ (b) $6.25 \times 10^{-18}$ $e^-$

(c) $1.6 \times 10^{-19}$ $e^-$ (d) None of these

39. The value of fundamental charge

(a) $1.6 \times 10^{19}$ C (b) $-1.6 \times 10^{-19}$ C

(c) $9.1 \times 10^{-31}$ C (d) $3.2 \times 10^{-19}$ C

40. Lines of forces starts to the charge and ends to the charge–

(a) + to – (b) – to +

(c) – to – (d) None of these