AMERICAN INTERNATIONAL UNIVERSITY – BANGLADESH (AIUB)
ADMISSION TEST FOR – SCIENCE/ENGINEERING

SET A

NAME:										
ROLL NO:			–						–	
Tick (✓) as appropriate										
CSE		**EEE**			**IPE**			**Arch.**		

Proctor's Signature

Please read the following instructions carefully:

- Total Marks : **100**
- Total Time : **100 minutes**
- There are three sections of the test booklet. Number of question and marks distribution are as follows:

Section	Contents	Number of question items	Marks
A	Short Essay Writing	1	**
B	Verbal	1 – 25	(25x2) = 50
C	Quantitative	26 – 50	(25x2) = 50

** *Answering **Section (A) is mandatory**. It will be evaluated by the viva board to judge your writing ability.*

- Use pen only for filling in your Name and Roll Number.
- Also use pen for answering Section A (Short Essay).
- Use **HB Pencil only** to fill in the OMR Sheet. This will allow you to erase or change your answers if needed.
- **DO NOT** write your **Roll Number** in the ID/ROLL Number section of the OMR Sheet. The Proctor will write the ROLL Number. **FILL** in the other sections of the OMR Sheet.
- Then **DARKEN** the appropriate circles according to your ROLL Number on the OMR Sheet.
- **WRITE SET NAME IN THE OMR SHEET**
- **RETURN THE QUESTION PAPER AT THE END OF THE EXAM**.
- Use the given space of the test booklet to answer **SECTION A**. No extra paper will be provided.
- Use the OMR sheet to answer **SECTIONS B & C.**
- Use of **CALCULATOR IS NOT ALLOWED**. Use blank spaces of your test booklet for rough works/computation. **DO NOT USE THE TOP SHEET (FRONT OR BACK)** of the test booklet for **ROUGH** works/computation.
- You can choose **ONLY ONE** option in your answers (i.e., **A** or **B** or **C** or **D** or **E**). If you circle more than one option the answer would be treated as **INVALID**.
- **Once you write your Name and Roll Number on the answer script and start answering the question,** YOU CANNOT REQUEST FOR AN EXTRA ANSWER SHEET, OR YOU CANNOT CHANGE YOUR ANSWER SHEET WITH A NEW ONE.

SECTION A: Write a Short Essay

(Complete your short essay within the space given below. No extra page will be given)
Maximum 3 paragraphs

"Necessity of Robotics and Automation for the Development of Bangladesh"

SECTION B: VERBAL SECTION (25 X 2 = 50)

PART A: SPELLING: Choose the correct spelling of the following words:	
1.	(A) symmatry (B) symetry (C) symmetry (D) simmetry
2.	(A) dictionery (B) dictionary (C) diktionary (D) dyctionary
3.	(A) biulding (B) bilding (C) building (D) beulding
4.	(A) chansellor (B) chancelore (C) chancellor (D) chanceller
5.	(A) achive (B) achieve (C) acheive (D) achiev
PART B: NOTIFYING ERROR: Read the following sentences and look carefully at each of the underlined words/group of words. Choose the portion in each of them which has error.	
6.	Our tribal woman are very hardworking in nature. A B C D
7.	Bread and butter are always his favorite breakfast. A B C D
8.	A group of students from Harvard University have come to meet our Vice Chancellor. A B C D
9.	Our teacher said that Jupiter was the biggest planet in universe. (A) (B) (C) (D)
10.	A team of students from USA's California University have come to AIUB on an exchange program. (A) (B) (C) (D)
PART C: WORD ANALOGY: Choose the item which is related to the word—the way the words of the first pair are related.	
	Example: *long: short; beautiful: ugly* *(A) pretty (B) ugly (C) gorgeous (D) witch*
11.	**We : Us ; She : _____** (A) Whose (B) His (C) Her (D) Their
12.	**Pen: Write ; Food: _____** (A) Drink (B) Sleep (C) Exercise (D) Eat
13.	**Library: Student ; Kitchen: _____** (A) Cooking (B) Meal (C) Customer (D) Chef
14.	Detective: Inspector ; Teacher: _____ (A) Student (B) Child (C) Professor (D) University
15.	Anarchy: Order ; Chaos: _____ (A)Turbulence (B) Disorder (C) Silence (D) Peace
PART D: VERBS/TENSES: Choose the correct usage of tenses:	

16.	Economics _____ my favorite subject in college though I hated the math portions in it. (A) were (B) have (C) has (D) was
17.	Spiderman reached the party after Batman _____. (A) would leave (B) have left (C) had left (D) left
18.	All of my cousins _____ in Thailand's Assumption University's Ph.D. program. (A) will enroll (B) enroll (C) are admitting (D) will admit
19.	Both of the goalkeepers _____ comfortable with the Jabulani ball. (A) are doing (B) are feeling (C) are playing (D) is feeling
20.	Jakarta, the capital of Indonesia, _____ known to be the fourth largest city in the world. (A) has (B) had been (C) are (D) is
PART E: PREPOSITIONS/CONJUNCTIONS: Choose the correct word(s) to fill in the gaps or correct answer for the unlined word(s):	
21.	The workshop will continue _____ the original plan of action. (A) as far as (B) as well as (C) according to (D) by means of (E) as long as
22.	The phenomenal movie really made my day; I will love to watch it again! (A) adjective (B) adverb (C) conjunction (D) verb (E) noun
23.	Since the man was walking _____ the road the bus hit him. (A) across (B) between (C) under (D) from (E) none of these
24.	_____ I see him, I will make him pay for the stupid things he did to me! (A) Where (B) Wherever (C) Whatever (D) However (E) Whoever
25.	_____ I see him, he moves his face to the other direction. (A) Where (B) Whenever (C) Despite (D) However (E) Whatever

SECTION C: QUANTITATIVE SECTION (25 x 2 = 50)

26.	In an office there are 4 chairs with handle and 3 chairs without handle. In how many ways the chairs can be arranged for sitting? (A) 7! (B) ${}^{4}c_{3}$ (C) 35 (D) 210 (E) ${}^{7}c_{7}$
27.	The values of $\sqrt[3]{-1}$ are (A) $1, \omega, \omega^2$ (B) $1, \omega^{\frac{1}{3}}$ (C) $1,-1, \omega$ (D) $-1, -\omega, -\omega^2$ (E) none
28.	If $x-2$ is a factor of $3x^4+5x^3+px^2-13x+6$, the value of p (A) -1 (B) 0 (C) 111 (D) -17 (E) none
29.	If $\lvert x-5 \rvert \geq 1$ the range of the values of (A) $x \geq 6$ or $x \leq 4$ (B) $4 \leq x \leq 6$ (C) $x > 6$ (D) ($x \geq 4$ (E) $-4 \leq x \leq 4$

30. If A= $\begin{bmatrix} 1 & 1 \\ -1 & -1 \end{bmatrix}$ and B= $\begin{bmatrix} -2 & -2 \\ 3 & 4 \end{bmatrix}$, then value of the determinant of AB is

(A) -1 (B) 0 (C) 4 (D) 1 (E) 5

31. The equation of the straight line passing through (–1, 1) and the intersection of the lines $x+y=3$ and $3y-x=5$ is

(A) $x+y=0$ (B) $2y+x=5$ (C) $2y-x=3$ (D) $3y-x=4$ (E) None

32. The equation of a curve is $y=x^3-2x+1$. The gradient (slope) of the curve at the point $(2,5)$ is

(A) –10 (B) 10 (C) 5 (D) 4 (E) 1

33. The coefficient of x^3 in the expansion of $(2-x)^8$ is

(A) 1792 (B) 56 (C) –1792 (D) –2000 (E) None

34. The area of the triangle with vertices $A(1,7)$, $B(-2,-4)$ and $(2,-1)$ is

(A) 12 (B) 15 (C) 15.5 (D) 17.5 (E) 18

35. In making a television set, the costs for labour and materials are in the ration 3 : 2. The manufacturer sells for Tk. 15,000 to make a gain of 25% on his outlay. What is the cost of the materials for the set?

(A) 1600 (B) 3200 (C) 4800 (D) 6400 (E) 8000

36. In a multiple choice question there is one correct answer and four wrong answers to each questions. For four such questions, in how many ways is it possible to select the wrong answers to all questions?

(A) 16 (B) 32 (C) 64 (D) 128 (E) 256

37. If the forces acting on a moving body cancel each other out (i.e. are in equilibrium) the body will

(A) move in a straight line at a steady speed (B) slow down to a steady slower speed
(C) speed up to a faster speed (D) be brought to a state of rest
(E) None of these

38. If $\log_2 k^3 = 6$, then k =

(A) $\frac{10}{3}$ (B) $\frac{19}{3}$ (C) 1 (D) 8 (E) 4

39. If $\frac{x+p}{(x-1)(x-3)} = \frac{q}{x-1} + \frac{2}{x-3}$, the values of p and q are

(A) $p=-2, q=1$ (B) $p=2, q=1$ (C) $p=1, q=-2$
(D) $p=1, q=-1$ (D) None

40. If $(2a+b)^2 = 3$ and $(a-2b)^2 = 2$ then a^2+b^2 =

(A) 5 (B) 1 (C) -1 (D) 13 (E) None

41. An equation of the circle passing through the origin and of radius of 3 is

(A) $x^2+y^2=9$ (B) $x^2+(y+1)^2=9$ (C) $(x+1)^2+y^2=1$
(D) $(x-1)^2+(y-1)^2=9$ (E) $x^2+(y-3)^2=9$

42.	A vector is given by $\vec{A} = 3\hat{i} + 4\hat{j} - 5\hat{k}$. Magnitude of the vector is: (A) 50 unit (B) – 2 unit (C) 0 (D) $25\sqrt{2}$ unit (E) none
43.	A particle falls freely from rest through a distance *d*. Its speed is then (A) $d\sqrt{g}$ (B) $-\sqrt{2gd}$ (C) $-\sqrt{(gd)/2}$ (D) $\sqrt{2gd}$ (E) None of them
44.	A maximum point on the curve $y = x^4 - 4x^3 + 4x^2 + 1$ is (A) $(-1, 10)$ (B) $(0, 1)$ (C) $(1, 2)$ (D) $(2, 1)$ (E) None
45.	Within the elastic limit, which of the following relation is correct? (A) Stress = Strain (B) Stress α Strain (C) Stress ≤ Strain (D) Stress ≥ Strain
46.	Fahrenheit scale reading will be twice the Celsius scale reading at --- (A) 180˚ F (B) 320˚ F (C) 90˚ F (D) 0˚ F (E) none
47.	If an oxygen molecule and a hydrogen molecule are at the same temperature, then what is the ratio of their mean kinetic energy? (A) 1:1 (B) 2:1 (C) 16:1 (D) 1:4 (E) None
48.	If p is the momentum of an object of mass m, then the expression p^2/m has the same unit as (A) acceleration (B) energy (C) force (D) impulse (E) None
49.	A satellite weighs 80 N at the earth's surface. If R is the earth's radius, at what distance from the earth would the weight of the satellite be 20 N? (A) R/4 (B) R/2 (C) R (D) 2R (E) None
50.	The smallest unit/constituents of matter is called (A) atom (B) molecule (C) nucleus (D) electron (E) None

-- End --