Roll No:



ARMY BURN HALL COLLEGE FOR BOYS Entry Test – Class AS Level (June 2022)

SUBJECT: ACCOUNTING

Maximum Marks: 20

- Write your Roll Number only on the top right corner.
- Do not write your name or any other information. •
- Do not use lead pencil.

Time Allowed: 30 Minutes

- Avoid erasing, cutting, overwriting, etc.
- Any sign, mark, name, etc written on Answer Script to disclose your identity will disqualify you for admission to the College.

INSTRUCTIONS

ATTEMPT ALL QUESTIONS SECTION-A (Marks 5)

Q. 1 Encircle the correct option.

C.

- Which of the following statements is incorrect? (1)
 - Assets Capital = Liabilities Α.
 - B Liabilities + Assets = Capital D.
- Liabilities + Capital = Assets
- Assets Liabilities = Capital
- (2) Which of the following is incorrect?

	Assets \$	Liabilities \$	Capital \$
Α.	7850	1250	6600
В.	8200	2800	5400
C.	9550	1150	8200
D.	6540	1120	5420

- (3) James bank statement showed a credit balance of \$ 2,170 at May 31st, 2016. An examination of the statement showed the following:
 - a direct debit for \$ 300 had been debited twice in the bank statement. (i)
 - a cheque for \$ 1015 sent to a supplier had not been presented for payment. (ii)
 - a cheque for \$ 600 paid into the bank had not been credited in the bank statement. (iii)

What was the cash book balance on 31st May 2016?

\$ 2055 Α. \$1455 Β. C. \$ 2285 D. \$2885

- (4) Which of the following cause a difference on a trial balance?
 - Α. an invoice omitted from the sale journal
 - Β. an invoice for \$ 415 entered in sales journal as \$ 451
 - C. an invoice for \$ 600 entered in sales journal not included in monthly statement
 - a credit note entered in the sales journal D.
- Which of the following does not appear in an income statement? (5)
 - motor vehicles B. A carriage outward
 - C. discount allowed D. discount received

SECTION-B (Marks 15)

Note: Attempt all questions. Each question carries five marks. $(3 \times 5 = 15)$

Q. 2 Show the effect of following transactions on accounting equation:

- (i) James commenced business with cash \$ 80,000 and equipment \$ 20,000.
- (ii) Purchase goods for \$ 20,000.
- (iii) Sold goods to Jack \$ 15,000 costing \$ 13,000.
- (iv) Jack return goods valued \$ 1,000 and costing \$ 500.
- Paid salaries \$ 2,000. (v)
- Depreciation of equipment \$ 1,000. (vi)
- (vii) Owner withdrew cash \$ 1,500 and goods valued \$ 500 for personal use.

Q. 3 State with reason whether the following items are capital revenue:

- (i) Purchase of a new van.
- (ii) Purchase of replacement engine for existing van.
- (iii) Cost of altering interior of new van to increase carrying capacity.
- (iv) Cost of motor tax for new van.
- (v) Cost of motor tax for existing van.

Q. 4 In January 2020, the following errors made in 2019 were found:

- Sales day book had been undercast by \$ 1,205. (i)
- (ii) Sales of \$ 980 to I. Blane had been debited in error to I. Blank's account.
- (iii) Rent account had been undercast by \$ 404.
- (iv) Discount allowed account had been overcast by \$ 59.
- The sale of a computer at net book value had been credited in error to the sales account \$ 200. (v)

Roll No:____

AND ACCENTS

ARMY BURN HALL COLLEGE FOR BOYS Entry Test – Class AS Level (June 2022)

SUBJECT: BIOLOGY

Time Allowed: 30 Minutes

Maximum Marks: 20

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 4)

Q. 1 Circle the correct option.

- (1) Placing an animal cell in a hypertonic solution will cause the cell membrane to form little spikes as water is lost and the cell shrinks, a process called:
 - A plasmolysis B de-plasmolysis C crenation D turgor
- (2) Maltose is formed by the combination of:

А	glucose and fructose	В	glucose and galactose
~	· · · ·		<i>i</i> , <u>i</u> , ,

- C glucose and glucose D fructose and galactose
- (3) The expose part of the eye ball is covered by a thin membrane called:
 - A conjunctiva B sclera C retina D iris
- (4) Special breathing roots in mangrove plants are called:
 - A hanging roots B tap roots C pneumatophores D hygrophores

SECTION-B (Marks 16)

	Note:	Attempt ALL questions. Each question carries four marks. (4	×4 = 16)
Q. 2	Fluctua discuss	ations always take place in environmental conditions. In case of high temperature, s the thermoregulatory adaptation and responses of plant body.	[4]
Q. 3	(a)	Why are enzymes so specific in their actions?	[2]
	(b)	How temperature destroy the structure of enzymes?	[2]
Q. 4	Stoma cells ar	ch is made up of 4 layers. The inner layer has variety of cells like parietal cells, ch nd endocrine cells. Write down the secretion and functions of these specialized cells	ief [4] 3.
Q. 5	Descrit	be double circulation of blood in mammals.	[4]



SUBJECT: BUSINESS STUDIES

Time Allowed: 30 Minutes

Maximum Marks: 20

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 5)

Q. 1 Encircle the correct option.

- (1)What is the basic economic problem?
 - Α. Finite resources and limited wants.
 - Finite resources and unlimited wants. Β.
 - Infinite resources and limited wants. C.
 - D. Infinite resources and unlimited wants.
- (2) A mixed economy is one that has:

Α.	farms and factories	В.	a public and private sector
C.	capital and consumer goods	D.	goods and services

The cost of raw material is: (3)

Α.	fixed cost	В.	variable cost
C.	average cost	D.	managerial

- average cost D. managerial
- (4) Which is an accounting equation?

A.	Assets = Capital – Liabilities	В.	Assets = Capital + Liabilities
C.	Capital = Assets + Liabilities	D.	Assets = Liabilities – Capital

- (5) Piece rate system is that:
 - when we pay to worker according to their performance. Α.
 - to pay workers more than their output. B.
 - C. to pay workers according to number of units produced by each worker.
 - D. to pay workers monthly bases.

SECTION-B (Marks 15)

Q. 2 Attempt all questions. Each question carries three marks.

 $(5 \times 3 = 15)$

- i. What is meant by liquidity?
- ii. Define partnership.
- iii. Give one advantage and one disadvantage of sole trader.
- Describe demand. iv.
- What is meant by private sector? ٧.



SUBJECT: CHEMISTRY

Time Allowed: 30 Minutes

Maximum Marks: 20

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 5)

Q. 1 Circle the correct option.

1.

- 1 Which one contains maximum no of electron in it?
 - A H_2 B H_2O C NaCl D O_2^{-2}
- 2 Which element has the same electronic configuration as the Strontium ion?
 - A calcium B krypton C rubidium D selenium
- 3 Which materials have the highest boiling point?
 - A ammonia B water C sodium chloride D methane
- 4 Which quantity is same for one mole of ethanol and one mole of ethane?
 - A mass B number of atoms
 - C volume at RTP D number of molecules
- 5 Which element will burn in air to form an acidic oxide?
 - A Ca B C C Mg D Fe

SECTION-B (Marks 15)

	Note: Attempt All questions. Each question carries three marks. (5×3 =				
Q. 2	Write	down the reaction for the hydrolys	sis of p	rotein and fats.	[3]
	(a)	Hydrolysis of proteins	(b)	Hydrolysis of fats	
Q. 3	(a)	What decides the strength of acid	ds and	bases?	[2]
	(b)	What is neutralization reaction?			[1]
Q. 4	Expla the sp	in in terms of collision theory tha beed of the reaction?	t how	concentration and temperature effect	[3]
	(a)	Effect of concentration	(b)	Effect of temperature	
Q. 5	How b endot	oond breaking and bond making d hermic?	ecide e	either the reaction will exothermic or	[3]
	(a)	In exothermic reactions	(b)	In endothermic reactions	
Q. 6	What	is electroplating. What are the bas	sic prin	ciples of electroplating?	[3]
	(a)	Electroplating	(b)	Principals of electroplating	

3. _

2. _____



SUBJECT: COMPUTER SCIENCE

Time Allowed: 30 Minutes

Maximum Marks: 20

- **INSTRUCTIONS**
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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 5)

Q.1 Six security issues and six descriptions are shown below. Draw a line to link each security issue to its correct description.

Security issue	Description
Pharming	illegal access to a computer system without the owner's consent or knowledge
[]	
Phishing	software that gathers information by monitoring key presses on a user's keyboard: the data is sent back to the originator of the software
Viruses	malicious code installed on the hard drive of a user's computer or on a web server; this code will re-direct the user to a fake website without the user's knowledge
]	
Hacking	creator of code sends out a legitimate-looking email in the hope of gathering personal and financial information from the recipient; it requires the user to click on
	the link in the email or attachment
Spyware	a message given to a web browser b a web server; it is stored in a text file; the message is then sent back to the server each time the browser requests a page from the server
Cookies	program or code that replicates itself; designed to amend, delete or copy data or files on a user's computer; often causes the computer to crash or run slowly

[5]

[2]

[2]

[3]

SECTION-B (Marks 15)

Note: Attempt **ALL** questions.

- Q. 2 Kamil and his band want to record the new track they have written. How could the quality of [2] the or sound recording on a computer be improved?
- **Q.3** Describe the difference between a static IP and a dynamic IP.
- **Q.4** Explain the difference between a compiler and an interpreter.
- **Q.5** Draw the logic circuit for the logic statement X = (A XOR (B AND C)) OR (A AND NOT B). [4]
- Q. 6 Explain how a #D scanner works. Give an example in your answer. [3]
- **Q.7** Explain how the use of moisture sensors can improve farming.
- Q. 8 Ali wants a new printer to take to university. He will be printing mainly essays and reports. [2] State which type of printer would be most suitable and say why.
- **Q.9** Explain two reasons why solid-state storage is not as common in desktop PCs and laptops [2] as hard disk drives.



SUBJECT: ECONOMICS

Time Allowed: 30 Minutes

Maximum Marks: 20

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 5)

Q. 1 Encircle the correct option.

- (1) What is the basic economic problem?
 - Finite resources and limited resources. A
 - Β. Finite resources and unlimited wants.
 - Infinite resources and limited wants. C.
 - D. Infinite resources and unlimited wants.
- (2) New oil reserves are discovered. What has increased in supply?

Α.	capital	В.	enterprise
C.	labour	D.	land

- (3) What may exist in monopoly but not in perfect competition?
 - Β. A. Barriers to entry Identical products D. Perfect knowledge
 - C. Market price
- (4) A mixed economy is one that has:
 - Α. farms and factories
 - C. capital and consumer goods
- (5)Prices tend to be lower in competitive industry than monopoly. Why is this?
 - A. Profit are lower in a monopoly.
 - A monopoly is a price taker. Β.
 - C. Competitive industry has more economies of scale.
 - D. New firms are free to enter in competitive industry.

SECTION–B (Marks 15)

Note: Attempt all questions. Each question carries five marks. $(3 \times 5 = 15)$

- Q. 2 Explain why it is impossible to solve economic problem.
- Q. 3 Define money. What functions are performed by money?
- Q. 4 Define price elasticity of demand price elasticity of supply and income elasticity of demand.

- Β.
- goods and services D.
- a public and a private sector



SUBJECT: MATHEMATICS

Time Allowed: 30 Minutes

Maximum Marks: 20

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 5)

Q. 1 Circle the correct option.

1	Whick	n of the following s	shape	e(s) have infinite	e lines	s of symmetry?		
	А	Rectangle	В.	Circle	С	Triangle	D.	Both B and C
2	Mean	of data 5, 5, 5, 5,	, 5, 5,	5, 5, 5	is			
	А	infinite	В.	10	С	5	D.	none of these
3	Form	ula to find the tota	al Surf	ace area of Pip	e is?			
	А	$\pi r^2 h$	В.	$2\pi rh$	С	$2\pi rh + 2\pi r^2$	D.	$2\pi rh + \pi r^2$
4	Sum	of interior angles	of a q	uadrilateral is?				
	А	180°	В.	540°	С	90°	D.	360°
5	Which	n of the following a	algeb	raic expression	is a p	olynomial?		
	A	$\frac{4}{r}$	В.	\sqrt{x}	С	$x^2 + 2x - 8$	D.	$x^{\frac{3}{2}}$

SECTION-B (Marks 15)

Note: Attempt all questions.

Q. 2



Triangle *A*, triangle *B* and the point P(-2, 2) are drawn on the grid.

(i) Describe, fully, the single transformation that maps triangle *A* onto triangle *B*.



The diagram shows a sequence of patterns.

Each pattern has one more row, and two more dots in each row, than the pattern before it.

- (a) On the diagram, draw Pattern 4.
- (b) (i) Complete the table for the first four patterns in this sequence.

Pattern number	1	2	3	4	n
Number of rows	2	3	4		p
Number of dots in each row	1	3			q

- (ii) Find an expression, in terms of *n*, for *p*.
- *p* = _____[1]

[1]

[1]

- (iii) Find an expression, in terms of n, for q.
- $q = _ [1]$ Q. 4 Solve the equation $2x^2 = 3(8 x)$ [4] Show all your working and give your answers correct to 2 decimal places. $x = _ or x = _$
- **Q. 5** Find the equation of a line which is parallel to line y = 2x + 7 and passing through [4] point (1, 5).

2



SUBJECT: PHYSICS

Time Allowed: 30 Minutes

Maximum Marks: 20

INSTRUCTIONS

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ATTEMPT ALL QUESTIONS

SECTION-A (Marks 5)

Q. 1 Circle the correct option.

1 A small cylinder is rolled along a ruler and completes two full turns as shown in the diagram.



What is the circumference of the cylinder?

A 4.4 cm B 5.1 cm C 8.8 cm D 10.2 cm

2 Which car experiences a resultant force that is not zero?

A a car moving along a straight horizontal road at constant speed

- **B** a car moving around a bend at constant speed
- **C** a car moving up a hill at constant velocity
- D a car that is at rest
- 3 Three identical resistors are joined in series to a battery.



Voltmeter Q reads 8.0 V.

What is the reading on voltmeter P and what is the e.m.f. of the battery?

	reading on P/V	e.m.f. of battery/V
A	4.0	8.0
в	4.0	12
С	8.0	8.0
D	8.0	12

The diagram shows an electromagnet. 4



How can the strength of the magnetic field around the electromagnet be increased?

- А Remove the metal core and decrease the current in the circuit
- в Remove the metal core and keep the current in the circuit constant
- С Reverse the d.c. supply and decrease the current in the circuit
- D Reverse the d.c. supply and increase the current in the circuit

5

The depth of the sea under a ship is determined by sending a pulse of sound with a frequency of 3000 Hz from a transmitter on the bottom of the ship to the seabed. The sound reflects from the seabed and returns to a receiver on the bottom of the ship.

The time between sending the pulse and receiving the reflected pulse is measured.



The depth of the sea beneath the ship is 600 m and the time measured is 0.80 s.

What is the wavelength of this sound in the sea?

- 0.25 m Δ
- в 0.32 m
- С 0.50 m
- 2.0 m D

SECTION-B (Marks 15)

Note: Attempt all questions.

Q.2 Fig. 1.1 is the speed-time graph for a stone as it falls to the ground.



Fig. 1.1

(a) (i) On Fig. 1.1, mark:

		•	a letter X to indicate a point where the rock is moving with a constant speed a letter Y to indicate a point where the rock is decelerating.	[2]
	(ii)	At ti	me $t = 0$, the acceleration of the stone is equal to the acceleration of free fall.	
		Give	the name of the force accelerating the stone at time $t = 0$.	
				[1]
(b)	The	weig	pht of the stone is 4.0 N.	
	As the stone falls, the force <i>F</i> of air resistance acting on the rock changes.			
	(i)	Stat	e the value of F at time $t = 0$.	
			F = N	[1]
	(ii)	Stat	e the value of F at time $t = 10.0$ s.	

	<i>F</i> = N [1]
(iii)	Suggest why <i>F</i> changes between $t = 0$ s and $t = 10.0$ s
	[1]

(c) (i) Using Fig. 1.1, determine the acceleration of the rock at time t = 4.0 s. State the unit of your answer.

You will need to draw a tangent to the graph in Fig. 1.1 and show your working.

acceleration = [3]

(ii) The mass of the stone is 408 g.

Determine the force *F* of air resistance acting on the rock at time t = 4.0 s. Show your working.

> F = N [2] [Total: 11]

Q. 3 Fig. 2.1 shows light in air, incident on the side of a rectangular glass block at an angle of 60°.



Fig. 2.1

The refractive index of the glass is 1.6. The light travels in the glass and is incident on side XY at P.

(a) Underline all the terms that describe a wave of light.

ectromagnetic longitue	inal radioactive	transverse	[1]
ectromagnetic longitue	inal radioactive	transverse	[1

Calculate angle r.

r =° [1]

(c) (i) Calculate the critical angle *c* for light travelling in the block.

	<i>c</i> =° [1]
(ii)	At P, the angle θ between the ray and the normal is given by $\theta = 90^{\circ} - r$.
	State and explain what happens to the light when it is incident on side XY.
	[1]
	[Total: 4]