آزاد حکومت ریاست جموں وکشمیر

نظامت اعلیٰ تحقیق وترقی نصاب

نمبر ن ت ت ن / 1251-64 / مورخہ 16-10-2026

بخدمت!

جملہ چیئرمین صاحبان ضلعی ایلیمنٹری بورڈز

مظفر آباد، جہلم ویلی، نیلم، پونچھ، باغ، حویلی، سدھنوتی، کوٹلی، میرپور، بھمبر

عنوان: نفاذ/عمل درآمد کیے جانے نیا امتحانی پیٹرن برائے جماعت ہشتم 50% Objective اور 50% Subjective

السلام علیکم!

معاملہ عنوان الصدر میں تحریر ہے کہ نظامت اعلیٰ تحقیق وترقی نصاب آزاد کشمیر نے قبل ازیں زیر مکتوب نمبر ن ت ت ن/67-1645 مورخہ 27-10-2025 آزاد کشمیر میں جملہ ضلعی ایلیمنٹری بورڈز کے زیر اہتمام منعقد ہونے والے امتحانات برائے سیشن 26-2025 میں یکسانیت کی غرض سے ماہرین تعلیم کی نگرانی میں جماعت پنجم و ہشتم کے جملہ مضامین کے ماڈل پرچہ جات (SLOs Based) مرتب کرواتے ہوئے ارسال کیے تھے۔ نئے امتحانی پیٹرن کے مطابق جماعت ہشتم میں تین مضامین (ریاضی، سائنس اور کمپیوٹر سائنس) منسلکہ ماڈل پرچہ جات واسسمنٹ سکیم برائے تعلیمی سیشن 27-2026 سے لاگو ہو گا۔

اندریں حالات حسب ہدایت جملہ متعلقین کو مطلع کیا جاتا ہے کہ آزاد کشمیر کے جملہ ضلعی ایلیمنٹری بورڈز اس امر کو یقینی بنائیں کہ سالانہ امتحان 2027 برائے ہشتم تین مضامین ریاضی، جنرل سائنس اور کمپیوٹر سائنس کے پرچہ جات نئی سکیم کے تحت جبکہ باقی مضامین کے پرچہ جات حسب سابق مہیا کردہ اسسمنٹ فریم ورک اور پیٹرن پر ہی لیے جائیں تاکہ آزاد کشمیر میں ضلعی ایلیمنٹری بورڈز کے امتحانات میں یکسانیت ممکن ہو سکے۔

و السلام

محمد [illegible] عباسی
ڈپٹی ڈائریکٹر
نظامت اعلیٰ تحقیق وترقی نصاب مظفر آباد

نمبر ن ت ت ن /_____/ مورخہ _____

نقل بالا بخدمت:

1۔ پرائیویٹ سیکریٹری ہمراہ جناب سیکریٹری ایلیمنٹری اینڈ سکینڈری ایجوکیشن آزاد کشمیر۔
2۔ ناظمین اعلیٰ تعلیمات سکولز (مردانہ/زنانہ) ایلیمنٹری اینڈ سکینڈری ایجوکیشن آزاد کشمیر۔
3۔ جناب ڈائریکٹر جنرل نظامت اعلیٰ تحقیق وترقی نصاب آزاد کشمیر۔
4۔ آفس ریکارڈ۔

ڈپٹی ڈائریکٹر
نظامت اعلیٰ تحقیق وترقی نصاب مظفر آباد

Azad Government of the State of Jammu & Kashmir

Directorate of Curriculum Research and Development

ASSESMENT FRAMWORK (GENERAL SCIENCE, MATHEMATICS AND COMPUTER SCIENCE) & GUIDELINES FOR TEST ITEMS DEVELOPMENT GRADE-VIII

(50% Objective & 50% Subjective)

Based on

National Curriculum of Pakistan (NCP)

2022-23

Directorate of Curriculum Research and Development (DCRD)

2026

ASSESSMENT FRAMEWORK BASED ON NATIONAL CURRICULUM OF PAKISTAN 2022-23

To ensure clarity and precision in assessment, the learning outcomes have been categorized into two distinct groups: formative and summative. This classification helps in effectively measuring student progress and understanding. Each Student learning outcome (SLO) has been carefully marked as either formative or summative within the newly developed Assessment Framework. SLOs of Summative Assessment Format will be part of the Final Examination while SLOs of Formative Assessment will although be part of the teaching-learning activity but they will NOT be part of Final Examinations. Estimated cognitive levels i.e Knowledge (K), Understanding (U) and Application (A) of all the SLOs have also been indicated. It may be noted that all the higher cognitive levels have been collectively accumulated in the cognitive level of 'Application'

Planning of the Test Item Development:

Planning of the test items development is the first important step in the test construction.

Keep in mind the following questions before development of test items. For example,

i. What is to be measured?

ii. What content areas should be included

iii. What types of test items are to be included?

Before Developing Test Items

A test developer must think and answer about curriculum and about their students before developing items following questions:

I): Why I am assessing

Ii): what I am assessing

III): what assessment methods should I use?

IV): How can I ensure quality in this assessment?

Vi): how can I use information from this assessment?

First step includes the following major considerations.

i. Determining the objectives of testing.

ii. Preparing specification Chart.

iii. Selecting appropriate item types

What is a test?

A test is series of questions used to assess the achievement of the students. The questions can be differed in form or format, but in the end assessors want that the students to

answer questions and on the bases of information gathered, interpretation and analyses some decision are taken in regarding teaching and learning and to grade the students.

Tools for the educational assessment

i. Written tests

ii. Oral test

iii. Projects

iv. Observations

v. Interviews

vi. Portfolios

vii. Anecdotal Notes

Standardized Tests

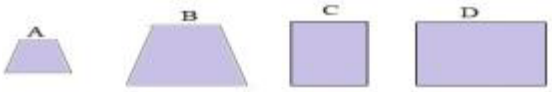
Standardized tests are based on Students Learning Outcomes, require all learners have to answer the same questions, or a selection of questions from common bank of questions, and is scored in the same way.

Common assessments are used to evaluating student performance in a more consistent, reliable, and effective manner.

Multiple Choice Questions (MCQs):

Multiple choice questions (MCQs) are a form of objective test items, in which students are asked to select suitable answer from the choices offered as a list for example, a MCQ on SLO [SLO: M08-D-07]

Which shapes are similar? (Stem of MCQ)



a) A and C b) B and C c) C and D d) A and B

The options a, b and c are the distractors of MCQ and option “d” is the key of the MCQ

Structure of MCQs

Stem of an MCQ:

Stem presents a specific problem to the examinee. It may be written either as an incomplete statement, question or as a stimulus. It states an issue or describes a situation.

This situation is mostly in a paragraph or a picture called the Stimulus.

Guidelines for writing Stem of MCQ:

i. Stem should be Simple in language

ii. It should be Understandable

iii. It should be Directed

iv. It should be a Body of knowledge within itself

v. It should be Smart in its length/size

vi. It measures single idea or concept

The stem should be meaningful by itself and should present a definite problem. A stem that presents a definite problem allows a focus on the learning outcome. Instruct students to select the "best answer". Use familiar language to the students in the stem, age and grade appropriate.

Avoid the following:

i. Clue in the stem

ii. Difficult & ambiguous language

iii. Double Negative

iv. Tricky

Options of MCQ:

There are four (4) options in an MCQ, out of which only one option should be the correct whereas the other three (3) are the un-key able options called distractors. Simply,

i. The "Correct" answer is the key

ii. The other responses are "DISTRACTORS"

iii. "DISTRACTORS" are the logical misconceptions of the correct answer and seem plausible to the candidates who have partial, incomplete or inappropriate knowledge

Guidelines for constructing of options:

When developing options for an MCQ following may be followed: ***Options should be***

i. Parallel in structure

ii. Homogenous

iii. Clear and concise

iv. Smart in size

v. Fit logical with stem /Syntax (with stem)

vi. In order (smallest to largest)

vii. Avoid using 'option" as a none of these, all etc.

Characteristics of Distractors:

While developing "Distractors", it should be kept in consideration that it is the hard part of MCQ. It can control/tune the difficulty level of an MCQ. Distractors have the following characteristics:

i. Use to control for difficulty of item

ii. Logical misconception to the key

iii. Plausible but wrong; attractive to those lacking the required knowledge, skill or attitude

iv. Parallel in syntax and grammar and should make sense

v. Avoid "specific determiners": Always, never

vi. If the stem is negative, avoid negative distracters

vii. Avoid All of the above, none of the above, both A & B etc.

Guidelines for writing Key:

In an MCQ key should have the following characteristics:

i. One key and one key only

ii. Should not stand out

iii. Should not contrast directly with another option

iv. No clue in the stem

v. Should not follow any pattern in placing key

One-Best MCQ Review Checklist

#	*Overall*	*yes*	*No*
1	Is appropriate for the level of the learner		
2	Is aligned to the Student Learning Outcome and its number is referenced		
3	Exam specification number is referenced		
4	Concept to be tested is stated appropriately/ Item is aligned with the concept being assessed		
5	The item is conceptually correct		
6	The cognitive level of the item is identified appropriately		
7	The difficulty level of the item is identified appropriately		
8	Assesses an essential (Must Know) or an important (Good to Know) item		
9	Can be answered with the options covered (Cover Test)		
10	Cannot be answered with the stem/ case covered (Test for Cognitive Level)		
11	Item author's name is mentioned		
12	An authentic reference is mentioned		
13	There are no spelling or grammar mistakes		
14	Task can be completed by the students in the assigned time		
Stem/ Case			
1	Clearly defined with no ambiguities		
2	Is contextual and relevant		
3	Contains all essential information; however, avoids irrelevant information		
4	Avoids abbreviations, uncommon terminologies, and brand names		
5	Clearly defined with no ambiguities		
Lead-in			
1	Focuses on one feature or concept		
2	Avoids negative phrases such as 'Except' and 'Not'		

3	Is clearly understandable at the level of the students		
Options			
1	Congruent with the lead-in		
2	Aligned with the lead-in in grammar		
3	Are of similar length		
4	Homogenous in content		
5	Distractors are plausible		
6	Listed in an alphabetical order		
7	Use generic and common terms		
8	Mutually exclusive (non-overlapping)		
9	Avoid phrases like 'all of the above' and 'none of the above'		
10	Avoid vague terms such as 'usually' and 'frequently'		
11	Avoids key terms from the stem or lead-in		
12	The key is clearly the best/ correct option for the level of the learners		
13	The key/ correct answer is identified		

Restricted Response Question (RRQ)

Restricted Response Questions (RRQs) are short answer questions that measure knowledge, understanding and application-level cognitive skills. Restricted-response questions are assessment items that ask students to apply knowledge, skills, and critical thinking abilities to real-world, standards-driven performance tasks.

Construct the stem of the questions with clear wordings and language which are age and grade level appropriate to the learners. Make sure the content of the short answer question measures knowledge/skills appropriate to the desired learning outcomes. Select verbs that match the intended learning outcome and direct students in their thinking. For examples:

Skill -1 Knowledge: Define, recall, state etc. (these types of test items are used to check the knowledge of the learners etc.)

Skill-2 understanding: compare, identify, differentiate, match etc

Skill-3: Apply knowledge to solve/calculate/find/explain, solve problems involving real life situation. In this types of questions where students are asked to provide an explanation/solve the problems/calculate/evaluate

Skill -4: Justify/support (in this type of a question includes a requirement to justify or support or provide an example of one or several specific occurrences of an idea or concept)

Constructed Response Question (CRQ):

CRQ items are those items where students are asked to give a detailed answer to a question, hence allowing them to write down their detailed view point in response to a question. CRQs are best for measuring higher order thinking skills.

Constructing Effective CRQs

While constructing an CRQ following guidelines maybe considered:

i. Be clear about the requirement of the SLO

ii. In constructing CRQs, the time limitations should be considered.

iii. Items should be constructed in such a way that it may look attractive and motivating for the students.

iv. Clearly identify the main points to be addressed in the ERQ.

v. The question posed in the question paper should address the scope and limitations of the required response.

vi. In order to cover maximum ideas (SLOs), the CRQs may be divided into sub parts or questions. However, these sub-parts should have more marks than the marks of the SRQs.

Guidelines for Writing Constructed-response Items

- Write questions in easily accessible language appropriate to the age and experience of the students. Use simple vocabulary and sentence structure.
- Select real life problem settings that are likely to be "real" to students at the target SLOs based, grade levels, and that involve quantities that are realistic for the situations.
- Students should be able to complete the task in the time allocated for each constructed-response item.
- It is essential to produce a scoring guide with well-defined categories for allocating score points. It is also helpful for those who are reviewing the question

Proof Reading of Question Papers

After formation of question papers, it is mandatory to validate it against the set criteria and requirements. Thus, the proof reading is mandatory. While proof reading, along many others, following aspects should be kept in consideration:

a) The question paper is based on curriculum and not on a particular textbook.

b) The question paper is valid (measuring accurately and well) and reliable (measuring consistently);

c) The Question Paper is strictly from within the prescribed curricula and is aligned with SLOs according to the Model Question Paper;

d) Marks of every question, every section and total number of marks of the Question Paper are according to the Model Question Paper

e) Numbers of questions in each section are in accordance with the Model Question Paper;

f) The question paper covers and represents all the SLOs to the possible extent;

g) The question paper does not contain material which can cause ethnic, social or religious hatred in the country;

h) No Spelling, Grammar and Technical mistakes (Scientific terms, mathematical expressions, chemical formulae, botanical / biological names and statistical terms etc.) have been left unchecked;

i) There is only one correct answer for each Multiple-Choice Question (MCQ) which has been checked and necessary correction (if any) has been made. The distracters have also been checked/reviewed and necessary corrections (where required) have been made in order to make them logical, rational and stronger and in order to attract the low achievers. Moreover, week distracters like all of them, none of the above, both A and B etc. have been removed; The question paper is balanced and it discriminates among the abilities of all categories of the candidates (i.e., below average, average and above average / brilliant students)

j) The question paper is solvable by an average student within the stipulated / allocated time;

k) No question has been repeated in any of the three/four sections of the question paper;

l) The supplementary material (i.e., Graph Paper, Drawing Paper, Log Table, Periodic Table and Calculator etc.) which is required in the examination hall has been mentioned against the relevant question in the Question Paper in the form of additional note(s);
m) The supplementary material recommended at point (xiii) above will not become cheating material for the rest of the question paper;
n) The language of questions is correct, simple, precise and easily understandable; and
o) The Urdu version (if applicable) is equally good and corresponds with its English version. At the same time both the versions communicate the same sense, meaning, tone, connotations and context.

Formation of Answer key and solution

A solution set/answer key is prepared at the time of paper development, keeping in view the requirement of the question(s). The total number of marks available for each question and each part of a question is shown in the marking scheme and must tally with the marks shown on the question paper.

Following are some of the guidelines:

I. Select the correct answer for each question
II. State the responses in a standardized manner with sufficient detail
III. Allocate marks for each question and parts of a question, with a detailed breakdown where necessary; each mark should reflect equal demand.
IV. Include instructions for assessing the quality of written expression, where applicable.

Marking Scheme and Rubrics

Marking scheme is a system of awarding marks to responses or part of a response in an examination. A rubric is a useful assessment tool that evaluates a student's response17 in terms of a particular score, point or grade. Rubrics clearly outline the criteria and expectations for one or more categories as they relate to a particular response.

Basic Design of Rubric

A rubric improves marking efficiency. It has three parts: criteria, standards and performance descriptors.

Criteria - the properties or characteristics used to judge the quality of the assessment task/ answer.

Developing Assessment Rubrics

A good rubric communicates criteria and standards simply, concisely and clearly.

It also provides sufficient detail to assist assessors, guide students and facilitate feedback.

Following are the key steps in developing rubrics:

I. Model answer/solution (refer or develop)
II. Identification of important steps (refer or develop)
III. Description of criteria for each step
IV. Development of Grid/Matrix

Conceptual Pattern Mathematics and General Science Grade-VIII (100 Marks)

Components	Detail
Marks Allocated to MCQs	50
Total MCQs	50
Marks per MCQ	1
Objective Portion – MCQs (50 Marks)	(Time Allowed: 1:10 hours) **Section-A** 38 straight MCQs (38 × 1 = 38 $marks$) 12 MCQs with (stimulus/situations/scenario) (12 × 1 = 12 $marks$)
Subjective Portion – SRQs & CRQs (50 Marks)	(Time Allowed: 1:50 hours) **Section-B (SRQs)** Section B having 10 questions. Each question has internal choice. Each question having 3 marks. (3x10= 30 marks) **Section –C (CRQs)** Section C having 4 questions. Each question has internal choice. Each question having 5 marks. (4x5= 20 marks)

Conceptual Pattern of Computer Science Grade-VIII (50 Marks)

Components	Detail
Marks Allocated to MCQs	24
Total MCQs	24
Marks per MCQ	1
Objective Portion – MCQs (24 Marks)	(Time Allowed: 1 hours) **Section-A** 20 straight MCQs (20 × 1 = 20 $marks$) 4 MCQs with (stimulus/situations/scenario) (4 × 1 = 04 $marks$)
Subjective Portion – SRQs & CRQs (26 Marks)	(Time Allowed: 1 hours) **Section-B (SRQs)** Section B having 08 questions. Each question having 2 marks. (2x08= 16 marks) **Section –C (CRQs)** Section C having 2 questions. Each question has internal choice. Each question having 5 marks. (2x5= 10 marks)

Azad Government of the State of Jammu & Kashmir

Directorate of Curriculum Research & Development, Muzaffarabad

Model Paper of Subject "Computer Science" Grade "8"

Marks: 24	Part-A: Multiple Choice Questions	Times: 60 Minutes

Instructions: Twenty four (24) Multiple Choice Questions (MCQ's) are given in this part. All of this section is to be answered. Each question carries one Mark.

1	A machine that can quickly and accurately perform tasks like a human.	Drone	Clone	Robot	System
2	Which one is the fifth-generation wireless technology?	2G	3G	4G	5G
3	A computer provides resources to all other computers in a network. What is the role of this computer?	Server	Clint	Modem	Router
4	If you create a private network from a public internet connection, what is it called?	LAN	PAN	MAN	VPN
5	A student wears a headset and experiences a simulated artificial environment that is computer-generated. Which technology is being used?	Hologram	Cloud computing	Virtual reality	Video
6	In a school lab, all the computers, printers and devices are connected without wires. Which transmission medium did they use?	Unguided media	Guided media	Coaxial cable	Input devices
7	Spreadsheet columns are identified by.	Symbols	Colours	Letters	Numbers
8	A user created a file in MS Excel that contains many worksheets. What is this file called?	Workbook	Ledger	Database	Excel book
9	Which Excel function will a teacher apply to find the total marks of a student?	MAX	TOTAL	ADD	SUM
10	A student entered the number 25 in cell A2 and applied an excel function. The student gets 5 after applying the function. What function might the student have used?	=MAX(A2)	=SQRT(A2)	=SUM(A2)	=PROD(A2)
11	Which value can change during the execution of a program?	Algorithm	Constant	Variable	Function
12	Which computational thinking technique will you use if you want to solve a problem by breaking it into small, manageable tasks?	Abstraction	Decomposition	Pattern recognition	Iteration
13	If you want to display a message 10 times without writing the same instruction again and again. Which programming concept will you use?	Abstraction	Pseudo code	Branching	Loop
14	Which is the correct pseudo code to print the product of two numbers?	INPUT a,b PRINT Prod	INPUT a,b Prod= a*b PRINT Prod	INPUT a,b Prod= a*b Prod= a*b	INPUT a,b Prod= a+b PRINT Prod
15	Which is the most important block in Scratch?	Events	Looks	Motion	Sound
16	What is a block in Scratch that performs a specific task?	Clone	Function	Condition	Constant
17	If you are writing Scratch code, which feature will you use so that a sprite can make a copy of itself while the project is running?	Variable assigning	Conditioning	Functioning	Cloning
18	How many common platforms are generally used for digital marketing?	4	7	8	9
19	What are the people who have millions of followers on social media platforms?	Programmers	Managers	Influencers	Users

20	A businessman created a document that described in detail an idea for a product or service and, importantly, how it will make money. What is this document called?	Marketing plan	Business plan	Selling plan	Buying plan
Ahmed receives an email that looks like it is from his bank. It asks him to click a link and enter his username and password. Ahmed remembered that his teacher told me about such illegal activities, so he did not provide the information and reported the email. His parents advise him to use trusted websites for downloading software.					
21	Any illegal activity performed using a computer and the internet is called:	Virus	Botnet	Cybercrime	Exploit kit
22	A fake email that tries to obtain personal information is called?	Phishing	Worm	Hacking	Plagiarism
23	Ahmed avoided clicking the link because he thought that:	Banks never send emails	It might steal his information	Emails cannot contain links	Passwords can't be stolen
24	From where should Ahmed download software?	Any website	Pirated sites	Unknown sites	Trusted websites

Azad Government of the State of Jammu & Kashmir

Directorate of Curriculum Research & Development, Muzaffarabad

Model Paper of Subject "Computer Science" Grade "8"

Total Marks: 26	**Part – B (Open Ended Questions)**	**Time: 01 Hours**

Instructions: Eight (08) Short Response Questions (SRQs) are given in this part.
Each Question carries two (02) Marks.

SECTION – I (Marks 16)

Attempt the following Questions (8x2=16)

1	Define the term "robotics".	**OR**	What do you know about Computer Assisted Translation?
2	What is difference between LAN & WAN?	**OR**	Differentiate between Coaxial cable and fiber optic cable.
3	Ali connects three computers in his class room to share files. Identify the network used to connect the computers.	**OR**	Why does an ordinary photograph look flat (2D) while a holographic image looks like real object (3D)?
4	A student has entered marks of five subjects in cells B2 to B6. Write a formula or function to calculate the total marks.		What is difference between a formula and a function in MS EXCEL? Give one example each.
5	Why is design thinking a human-centered process?	**OR**	How can computational thinking be used to solve a problem?
6	What is advantage of cloning in Scratch?	**OR**	Define visual programming. Give example.
7	What measures can we take to protect ourselves from social engineering attacks?	**OR**	Why are Internet of Things devices easy to hack?
8	Write names of eight common digital marketing platforms.	**OR**	What are search engines? Give two examples.

SECTION – II (Marks 10)

Instructions: Two (02) Constructed Response Questions (CRQs) are given in this part.
Each Question carries five (05) Marks.

1	What do you know about Robots? Do you think Robots will replace humans in the workplace? Justify.	**OR**	What is the role of a server in a computer network? Also discuss the importance of a server in distributed applications.
2	Write ways of protecting from the following using internet and e-mail. (i) Identity Theft (ii) Online Scams	**OR**	Why is Search Engine Optimization important? Also discuss some traditional marketing techniques.

Table of specification Paper of Computer Science 8th

Content	Domain A:	Domain B:	Domain C:	Domain D:	Domain E:	Domain F:	Total	%
Domain Area	**ICT fundamental**	**Digital skill**	**Algorithm Thinking**	**Programming**	**Digital Citizen Ship**	**Entrepreneurship in Digital Age**		
Knowledge	Objective 2=2 Marks SRQ 1 =2 marks	Objective 1=1 Marks	Objective 1=1 Marks	Objective 2=2 Marks SRQ 1 =2 marks	Objective 2=2 Marks ERQ 1 =5 marks	Objective 1=1 Marks SRQ 1 =2 marks ERQ 1 =5 Marks(OPT)	**20**	**40%**
Understanding	Objectives 2=2 marks SRQ 1 =2 marks ERQ 1= 5 marks	Objectives 1=1 marks	Objectives 2=2marks	Objectives 1=1 marks	Objectives 1=1marks SRQ 1 =2 marks	Objectives 1=1 marks	**17**	**34%**
Application	Objectives 2= 2 Marks SRQ 1 =2 marks	Objectives 2= 2Marks SRQ1 =2 marks	Objectives 1= 1 Marks SRQ1 =2 marks		Objectives 1= 1 Marks	Objectives 1= 1 Marks	**13**	**26%**
Total Marks	17	6	6	5	11	5	50	
Total Percentage	**34%**	**12%**	**12%**	**10%**	**22%**	**10%**	100%	

Azad Government of the State of Jammu & Kashmir

Directorate of Curriculum Research & Development, Muzaffarabad

Model Paper of Subject "General Science" Grade "8"

Marks: 50	Part-A: Multiple Choice Questions	Times: 60 Minutes

Note: No marks would be awarded to cutting or overwriting.

1	**Breathing is mainly controlled by:**						
	a	Pons	b	Medulla	c	Thalamus	d	Hypothalamus
2	**Changes that occur in population of organisms are known as:**						
	a	adaptations	b	Variations	c	Mutations	d	Fertilization
3	**Acidic solutions have pH values:**						
	a	7-10	b	1-6	c	8-12	d	13-17
4	**Atmospheric pressure is measured by:**						
	a	anemometer	b	Wind vane	c	Barometer	d	Thermometer
5	**Which organisms blend into their environment?**						
	a	Fast running	b	camouflaged	c	Thick furred	d	Blubber
6	**About how many genes are present in humans?**						
	a	20,000	b	5000	c	1000	d	10,000
7	**The SI unit of density is:**						
	a	Km	b	Kg/m^3	c	P	d	Kg
8	**The salt used to coagulate the blood coming out of wound:**						
	a	Plaster of Paris	b	Sodium chloride	c	Potash alum	d	Calcium carbonate
9	**Vaccines, antibiotics and bio therapeutic products are related to which of the following fields?**						
	a	Baking and brewing industry	b	Clothes industry	c	Chemical industry	d	Pharmaceutical industry
10	**From where the sensory neurons carry messages?**						
	a	Brain to body	b	Receptors to brain	c	Effectors to body	d	Brain to spinal cord
11	**Which of the following is not an example of a natural resource?**						
	a	Fossil fuels	b	Minerals	c	Water	d	Cars
12	**What is the color of Rigel star?**						
	a	Yellow	b	Blue	c	Purple	d	Orange
13	**What is the pH of water?**						
	A	9	b	10	c	7	d	4
14	**The building blocks of life are called:**						
	a	Cells	b	Molecules	c	Tissues	d	Organs
15	**The angle between incident ray and normal is called:**						
	a	Angle of reflection	b	Angle of refraction	c	Angle of incidence	d	Right angle
16	**Which amount of carbon dioxide is responsible for greenhouse gases?**						
	a	100%	b	99.9%	c	80%		82%
17	**Which color has the smaller index of refraction?**						
	a	Red	b	Yellow	c	Violet	d	Purple
18	**Which of the following is decided by the chromosomes?**						
	a	Voice	b	Gender	c	Hair length	d	Skin color
19	**Speed of light is:**						
	a	$3\times10^6 m/s$	b	$3\times10^9 m/s$	c	$3\times10^8 m/s$	d	$3\times10^2 m/s$
20	**The chemical formula for Sulfuric acid is:**						
	a	H_3PO_4	b	H_2CO_3	c	H_2SO_4	d	HNO_3
21	**Which can produce the strong magnetism?**						
	a	Soft core	b	Rubber core	c	Hard core	d	Inner core
22	**Errors or changes in genes are called:**						
	a	Mutations	b	Crossing over	c	Adaptations	d	Variations
23	**How many chromosomes are there in Lilly plant?**						
	a	46	b	26	c	15	d	24
24	**Which one of the following is natural indicator?**						
	a	Turmeric	b	Litmus	c	Methyl orange	d	Phenolphthalein
25	**Which of the following is used to make bioplastic?**						
	a	Steel	b	Tin	c	Glass	d	Vegetable fat
26	**80,000 pascal = ____ atmospheres.**						
	a	0.79 atm	b	0.80 atm	c	0.8000 atm	d	0.5 atm

27	**Which of the following color is apparently not a part of the spectrum of light?**							
	a	orange	b	Blue	c	Grey	d	Green
28	**What is the function of fuse?**							
	a	Prevent flow of less current	b	Prevent flow of less Excessive current	c	Prevent flow of less Light current	d	Prevent flow of less Live current
29	**The strength of an electromagnet is _____ by increasing the number of loops around iron bar.**							
	a	decreased	b	Increased	c	Balance	d	Neutralized
30	**The material through which heat and light can pass is called:**							
	a	Semi - conductor	b	Non-conductor	c	Conductor	d	Resister
31	**Which of the following is the type of exercise in which our body moves in various positions in order to become more fit?**							
	a	aerobic exercises	b	yoga	c	Gym	d	Jogging
32	**What is the function of Mid brain?**							
	a	Balance between body organs and brain	b	connection between body organs and brain	c	Communication between body organs and brain	d	Regulates between body organs and brain hunger
33	**Combination reaction always:**							
	a	Involve one element	b	Requires oxygen	c	Forms one product	d	Use only one reactant
34	**The power source in UPS is:**							
	a	generator	b	Electricity	c	Battery	d	Switch
35	**The light rays are _____ in nature.**							
	a	radio waves	b	microwaves	c	Infrared	d	Electromagnetic waves
36	**Which one is a good antiseptic agent?**							
	a	hydrogen	b	Fluorine	c	Bromine	d	Iodine
37	**How many lobes are there in cerebral cortex?**							
	a	3	b	2	c	4	d	5
38	**$2Mg+O_2$ ---------→**							
	a	2MgO	b	Mgo_2	c	2m2g	d	$2MgO_2$

scenario for MQs 39-42	During a science class, a teacher takes vinegar and baking soda in a flask and seals it with a balloon. Before mixing the substances, she measures the total mass of the flask, its contents, and the balloon. The student then mixes the substances. Bubbles form, and the balloon inflates due to the production of carbon dioxide gas. The teacher measures the total mass again and finds that it remains the same.
39	If 8 g of one substance reacts with 12 g of another substance in a closed system, what is the total mass of the products? A.4g B.12g C.20g D.24g
40	What causes the balloon to inflate during the reaction? A. Oxygen is absorbed from the air. B. Carbon dioxide gas is produced. C. The flask produces heat only. D. The baking soda disappears.
41	Which law is demonstrated by this experiment? A. Law of Gravity B. Law of Conservation of Mass C. Law of Reflection D. Law of Motion

42	Why does the total mass remain the same after the reaction? A. The gas has no mass. B. The substances disappear. C. Matter is neither created nor destroyed. D. The flask becomes lighter.
scenario for MQs 43-46	The students observe that grass absorbs energy from the Sun to prepare its food. Grasshoppers feed on grass, frogs eat grasshoppers, and snakes eat frogs. The teacher explains that energy transfers from one organism to another through feeding. However, some energy is used for life processes and released into the environment as heat at each stage.
43	What is the primary source of energy for this food chain? A. Grasshoppers B. Soil C. The Sun D. Snakes
44	Which organism is the producer in this food chain? A. Frog B. Grass C. Grasshopper D. Snake
45	In which direction does energy flow through this food chain? A. Snake → Frog → Grasshopper → Grass B. Grass → Grasshopper → Frog → Snake C. Frog → Snake → Grass → Grasshopper D. Grasshopper → Grass → Snake → Frog
46	What happens to some of the energy at each stage of the food chain? A. It is completely recycled back to the Sun. B. It increases at every stage. C. It is released into the environment as heat. D. It is stored entirely in the next organism.
scenario for MQs 47-50	During a science lesson, a teacher shows students the periodic table of elements. She explains that elements are arranged in order of increasing atomic number. The students observe that the periodic table has horizontal rows and vertical columns. They also learn that elements in the same vertical column often have similar chemical properties.
47	Why do lithium, sodium, and potassium have similar chemical properties? A. They have the same atomic number. B. They have the same number of electron shells. C. They belong to the same group and have the same number of outer-shell electrons. D. They have the same atomic mass.
48	What are the horizontal rows of the periodic table called? A. Groups B. Periods C. Families D. Metals
49	On which basis are elements arranged in the modern periodic table? A. Increasing atomic mass B. Increasing atomic number C. Decreasing density D. Increasing number of neutrons
50	What are the vertical columns of the periodic table called? A. Periods B. Rows C. Groups D. Blocks

Azad Government of the State of Jammu & Kashmir

Directorate of Curriculum Research & Development, Muzaffarabad

Model Paper of Subject "General Science" Grade "8"

Total Marks:50	**Part – B (Answer all these questions)**	**Time: 1.5 Hours**

1	Describe phenomenon of camouflage adaptation in organisms with two examples?	2+1	**OR**	Define gene along with its function?	2+1
2	List three ways to boost memory and attention?	03	**OR**	Enlist factors contributing to global warming and write one effect of each factor?	1.5+1.5
3	What happens to object's motion when forces acting on it are unbalanced?	03	**OR**	Why does temperature of surrounding mixture rise in an exothermic reaction?	03
4	Chromosomes are carrier of gene and DNA. Justify the statement?	03	**OR**	How excessive hunting affects our ecosystem?	03
5	State law of conservation of mass?	03	**OR**	How does a vaccine work?	03
6	What is crossing over what are its effects?	1.5+1.5	**OR**	Define electric current write it's unit?	2+1
7	Define chemical reaction and give example?	2+1	**OR**	Differentiate between mutualism and antagonism?	03
8	Define neutralization reaction give example?	2+1	**OR**	What is difference between star and a galaxy?	03
9	Enlist measures to reduce global warming?	03	**OR**	What are periods in the periodic table?	03
10	Differentiate balance and unbalanced force?	03	**OR**	Write chatecteristics of convex mirror?	03

Q No. 3 Attempt all questions (4×5)

Describe the structure and composition of DNA?	05	**OR**	Compare physical properties of metals and non-metals?	05
Explain the reflection of light describe its laws?	3+2	**OR**	Explain mitosis and it's different phases?	05
Describe importance of biotechnology in improving lives including it's application in pharmaceutical?	05	**OR**	What is the importance of heredity in transferring characteristics from parents to off springs?	05
Explain significance of oxygen cycle for ecosystem?	05	**OR**	Define electromagnetic. Describe factors that affect strength of electromagnets?	05

Table of Specifications for Science – Grade-8 Summative Assessment

Domains / ***Cognitive Level***	***Domain -A***	***Domain-B***	***Domain-C***	***Total***	***Percentage***
Knowledge	16 Marks	40 Marks	04 Marks	**60**	**40 %**
Understanding	29 Marks	21 Marks	0 Marks	**50**	**34%**
Apply	03 Marks	14 Marks	03 marks	**20**	**14%**
Analyze	02 Marks	08 Marks	0 Marks	**10**	**6%**
Evaluate	05 Marks	05 Marks	0 Marks	**10**	**6%**
Create					
Total	55 Marks	88 Marks	7 Marks	***150***	***100%***
	37%	***59%***	***4%***		

MODEL PAPER MATHEMATICS

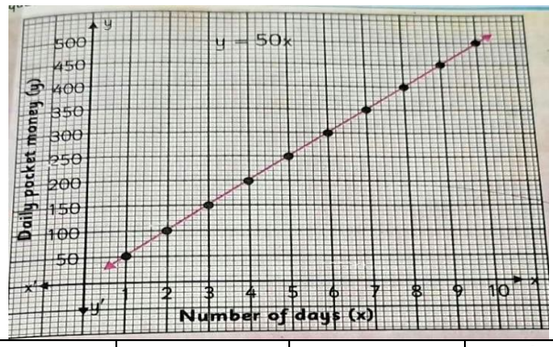
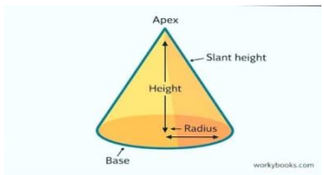
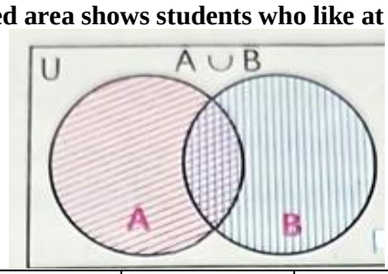
Grade – 08(SLOs Based Assessment NCP 2022-3)
PART-A (Objective Type (50×1 = 50)
Part-A: 50 Marks, Part-B: 50 Marks, Total: 100 Marks
(INSTRUCTION)

Fifty (50) Multiple Choice Question (MCQs) are in this part.
Each question carries **1**marks.
Time Allowed: 1:10 hours

Section – A is compulsory.

All parts of this section are to be answered on this page and handed over to the Centre Superintendent.
Deleting/overwriting is not allowed. Do not use lead pencil. Tick (✓) the correct answer

S#	Statements	A	B	C	D	Domains
1	Which one of the following is a irrational number?	$\sqrt{2}$	$\sqrt{25}$	$\frac{30}{5}$	$-\frac{2}{3}$	K
2	Which one is non-terminating decimal?	13.4279…	0.5	9.47	0.787	K
3	The number '1839591' is rounded off to correct 5 significant figures is:	1830000	1839600	1839590	1839000	U
4	69292 to the nearest 100 is	69292	69290	69300	69000	U
5	Estimate the sum by rounding each number to the nearest ten. 988 + 185	1170	1100	1173	1180	A
6	The square root of 0.04 is:	4	0.002	0.2	2	U
7	The cube root of 216 is:	26	16	36	6	K
8	The relation between the quantity x = 500 and y = 700 is directly proportional then the value of constant K is:	5	2.5	1.4	7	U
9	How is discount calculated when Marked Price (MP) and Selling Price (SP) are given?	Selling Price - Marked Price	Marked Price - Selling Price	Cost Price - Selling Price	Marked Price + Selling Price	K
10	A TV set is purchased for Rs 12,000 and is marked up by 25%, its profit will be	Rs 3,000	Rs 5,000	Rs 6,000	Rs 1500	A
11	A widow gets 1/8 of her husband's inheritance. How much amount she will get if her husband's assets are Rs 400,000?	Rs 40000	Rs 20000	80000	50000	A
12	If U = {1, 2, 3, 4,...,10} and A = {2,4,6,8} then A' is equal to.	{2,4,6,8}	{1,2,3,4,5}	{1,3,5,7,9,10}	{1,3,5,7,9}	U
13	$\{ x \mid x \in W \wedge x \leq 10 \} =$	{1,2,3,.,10}	{0,1,2,3,...,10}	{2,4,6,8,10}	{1,3,5,7,9}	K
14	The next term of sequence 11, 13, 17, 19, 23 is:	25	27	29	31	U
15	If the nth term of an arithmetic progression is 2n + 4 than the 5th term of an arithmetic is:	14	10	12	8	A
16	Algebra was introduced by a mathematician named M. Ibn e Musa Al-Khwarizmi in	550–650	670–700	900–950	780–850	K
17	Which one is a quadratic polynomial?	$4x^3 + 2x^2 + 1$	$5x^2 + 2x + 4$	$2x + 3$	$x^2 - x^2 + 4$	K
18	The simplified form of $(4x^3 - 6xy - 9y^2) - (2x^3 - 5xy + 4y^2)$ is equal to	$6x^3 - 11xy - 13y^2$	$2x^3 + xy + 13y^2$	$2x^3 - xy - 13y^2$	$6x^3 + 11xy + 13y^2$	U
19	If a+b = 10 and a−b = 5 than $a^2 - b^2$ =	50	60	20	10	U
20	If 3x + 4y = 2 then; y is equal to:	$y = \frac{(2 - 3x)}{4}$	$y = \frac{(3 - 2x)}{4}$	$y = \frac{(4 - 3x)}{2}$	$y = \frac{(3 - 4x)}{2}$	U
21	ax + by + c = 0 is linear equation in:	one variable	three variable	two variable	four variable	K
22	If A(7, 6) and B(3, −5) the gradient is:	−11/3	−1/4	1/4	$\frac{11}{4}$	A
23	What is the correct formula for the volume of a hemisphere with a radius of r?	$\frac{4\pi r^3}{3}$	$\frac{2\pi r^3}{3}$	$\frac{3\pi r^3}{4}$	$\frac{3\pi r^3}{2}$	K
24	The value of straight angle is:	60°	90°	180°	270°	K
25	If two figures have same shape but different size then the figures are called:	similar figures	congruent figures	closed figure	open figures	K
26	The base in the expression 12^9 is:	9	12	13	4	K
27	The range of data 8, 8, 10, and 11 is:	11	8	17	3	U
28	The most frequent observation in a data is called:	Mean	Median	mode	frequency	K
29	$s = \sqrt{\sum x^2 - (\frac{\sum x^2}{n})}$ is called:	Mean	Median	standard deviation	Variance	K
30	If a coin is tossed then probability of getting tail is:	$\frac{1}{2}$	$\frac{1}{3}$	$-\frac{1}{2}$	$\frac{2}{1}$	k
31	The probability of an even number when a dice is thrown is:	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{6}{3}$	$\frac{1}{6}$	K
32	The number 476.5173 is rounded off to correct 3 decimal place.	476	476.517	476.518	476.5	U
33	If a sample space S = {1, 2, 3, 4, 5, 6} and successful outcomes in event A = {5} then probability of A is:	$\frac{1}{6}$	$\frac{6}{1}$	$\frac{3}{6}$	$\frac{5}{6}$	A

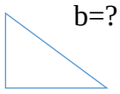
34	Which of the following is a perfect square?	99	120	196	288	k
35	If price of 5 kg mangoes is Rs 250. Then the price of 2 kg is:	50	100	180	80	A
36	$(x + 9)(x - 9) =$	$x^2 - 18$	$x^2 - 81$	$x^2 + 81$	$x^2 + 18$	U
37	What is the set-theoretic equivalent to $(A \cup B)^c$?	$A^C U B^C$	$A^C \cap B^C$	$A^C U B$	$A U B^C$	K
38	Median of given numbers: 6, 2, 4, 3, 4, 5, 4,5 is:	2	3	5	4	U
Scenario for MCQs 39 to 42		**Ali gets Rs 50 daily as pocket money the total money he collects is shown by the equation y=50x** 				
39	If Ali saves for 4 days, how much total money will he have according to the graph?	Rs 150	Rs 200	Rs250	Rs 100	A
40	If Ali wants to buy a book for Rs 400, how many days will he have to save?	6days	7 days	8 days	9 days	A
41	Which proportion is shown in this graph?	Inverse proportion	Direct proportion	No proportion	Compound proportion	U
42	If the pattern continuous, What will be the total pocket money for 10 days?	Rs 450	Rs 475	Rs 500	Rs 550	A
Scenario for MCQs 43 to 46		**A birthday cap is in the shape of a cone with circular base radius 7 cm and height 24cm?** 				
43	In the given figure point at the top of the cone is called	center	vertex	radius	diameter	K
44	For the birthday cape r=7cm and h=24cm, what is its slant height	25cm	20cm	30cm	26cm	A
45	The distance from vertex to center of base is called:	Slant height	radius	Vertical height	diameter	K
46	If the cone is cut and opened the curved surface area is	550cm²	500cm²	440cm²	600cm²	A
Scenario for MCQs 47 to 50		**In class 8th set A= students who like cricket, set B= students who like football. Shaded area shows students who like at least one game.** 				
47	What does the shaded area in the figure represent?	A ∩ B	A U B	A-B	U	K
48	If A ={1,2,3,4} and B={3,4,5,6} then A U B will be:	{3,4}	{1,2,5,6}	{1,2,3,4,5,6}	{1,2}	A
49	If n(A)=15 n(B)=12 and n(A ∩ B)=5 then n (A U B) is:	27	22	32	17	A
50	In a class of 40 students 20 likes cricket (A), 18 like football (B) and 6 like both, how many students like at least one game. (A U B)?	32	38	26	40	A

MODEL PAPER MATHEMATICS

Grade – 08(SLOs Based Assessment NCP 2022-3)

SUBJECTIVE (SECTION II) TIME 2:50 HOURS

Q1. Attempt the following questions. All carry equal marks. 10 × 3 = 30

1.	Express the given number as decimal. (i) $\frac{37}{30}$ (ii) $\frac{6}{140}$ (iii) $\frac{1}{5}$	U	OR	Estimate value of the following: $\sqrt{\frac{3.87 \times 140.6}{9.32}}$	U
2.	Find the square root of 96.	U	OR	Find the cube root of 343.	U
3.	If 3 men earn Rs 480 in a day, find how much will 7 men earn in a day.	A	OR	Distribute Rs 130000 among two shareholders, so that their shares are in the ratio 2:3.	A
4.	Write the power-set of {2, 4, 6, 8}.	U	OR	Evaluate by formula: 73 × 67	U
5.	Factorize the following: $x^2 + 8x + 16$	U	OR	Expand $(2a+5b)^3$ using the basic algebraic identities.	U
6.	Simplify $\frac{9a^2b^5}{-3ab^2}$ using law of indices.	A	OR	Find the value of missing side. a=13cm b=? c=35cm 	A
7.	Construct a line of 8cm and draw a line bisector.	A	OR	Classify the following as a terminating and non-terminating decimal. (0.5) ,$\frac{1}{3}$, (0.25), $\frac{22}{7}$, (2.375), $\frac{1}{5}$	A
8.	Plot the graph of following lines: (i) x = 12 (ii) y = −7	A	OR	Find the mean of given numbers: 2, 1, 3, 4, 3, 2, 3	A
9.	If area of square is 225 m² then find its length.	U	OR	Write the next three terms of sequence: 5, 8, 11, 14, 17, ...	U
10.	A gold chain is sold for Rs 76,500 at a gain of 25%. Find the profit.	A	OR	Draw a square whose sides measure 4.3 cm each.	A

SECTION III

Attempt the following questions. All carry equal marks. (4 × 5 = 20)

1.	Verify De Morgan's Laws for the following sets: U = {1, 2, 3, ..., 10}, A = {3, 4,5, 6, 7} B = {5, 6, 7, 8, 9}	**A**	**OR**	If P is inversely proportional to Q and Q = 7.5 when P = 5. Find the value of Q when P = 2.5.	A
2.	Find the product of $(4x^3 - 3x^2 - 4x - 2) \times (2x - 3)$	**U**	**OR**	If $x + 1/x = 3$, then find the value of $x^3 + 1/x^3$.	U
3.	The number of students in a government university in each discipline are: Disciplines: BBA, MBA, BS Eng, MSC No. of students: 60, 75, 45, 28 Represent the data by a pie graph.	**A**	**OR**	Construct ΔABC if:- m∠AB = 4cm, m∠B = 60° m∠BC = 5 cm.	A
4.	Calculate the variance of 3, 5, 7, 9, 11.	**A**	**OR**	The base area of cone is 67.24π cm² and slant height is 12.8 cm. Find the height and surface area of cone.	A

Table of Specifications for Mathematics – Grade VIII Summative Assessment

Domains / **Cognitive Level**	**Domain -A**	**Domain-B**	**Domain-C**	**Domain-D**	**Domain-E**	**Total**	**%**
Remember	MCQ (8 marks)	MCQ (4 marks)	MCQ (2 marks)	MCQ (3 marks)	MCQ (5 marks)	**22**	**15%**
Understand	MCQ (6 marks) SRQs(15 marks	MCQ (5) SRQs (12) CRQs (10)	SRQs (3)		MCQ (2 marks)	**53**	**35%**
Apply	MCQ (9) SRQs (12) CRQs (10)	MCQ(2marks SRQs (6)	MCQ (3) SRQs (3) CRQs (5)	SRQs (6) CRQs (5)	MCQ (1) SRQs (3) CRQs (10)	**75**	**50%**
Total	***60***	***39***	***16***	***14***	***21***	***150***	**100**
%	***40***	***26***	***11***	***9***	***14***	**----**	

Note:

1: This ToS does not reflect policy, but it is particular to this model question paper.

2: Proportionate /equitable representation of the content areas may be ensured.

3: The percentage of cognitive Level is ***20%, 30%, and 50%*** for knowledge, understanding, and application, respectively with **± *5% variation.***

The domain of Application also contains all other higher order Cognitive Levels (**Analyse, Evaluate, Create)** of Bloom's Taxonomy.

4: While selecting alternative questions for Short Response Questions (SRQs) and Constructed Response Questions (ERQs), it must be kept in mind that:

• Difficulty levels of two alternative questions of the internal choice will be same

• SLOs of the two alternative questions of the internal choice must be different