PUNJAB
EDUCATION FOUNDATION
# MATHEMATICS

Total Marks: 20

## SECTION – I

Q. No. 1. Encircle the correct answer from the following choices. (8 marks)

**Statement**

1. The solution set of equation $4x^2 - 16 = 0$ is:

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>a) ${\pm 4}$</td>
<td>b) ${4}$</td>
</tr>
<tr>
<td>c) ${\pm 2}$</td>
<td>d) $\pm 2$</td>
</tr>
</tbody>
</table>

2. If $b^2 - 4ac < 0$, then the roots of $ax^2 + bx + c = 0$ are:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Irrational</td>
<td>b) Rational</td>
</tr>
<tr>
<td>c) Imaginary</td>
<td>d) None of these</td>
</tr>
</tbody>
</table>

3. Value of “x” in proportional $4 : x :: 5 : 15$ is:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) $\frac{78}{4}$</td>
<td>b) $\frac{4}{5}$</td>
</tr>
<tr>
<td>c) $\frac{3}{4}$</td>
<td>d) 12</td>
</tr>
</tbody>
</table>

4. The different number of ways to describe a set are:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) 1</td>
<td>b) 2</td>
</tr>
<tr>
<td>c) 3</td>
<td>d) 4</td>
</tr>
</tbody>
</table>
5. A data in form of frequency distribution is called:

<table>
<thead>
<tr>
<th>Option</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Grouped data</td>
<td>جمعیت کی تعدادی اعداد کل 8</td>
</tr>
<tr>
<td>b) Ungrouped data</td>
<td>بی جمعیتی اعداد کل 8</td>
</tr>
<tr>
<td>c) Histogram</td>
<td>کششی تعدادی نمودار 8</td>
</tr>
<tr>
<td>d) Frequency polygon</td>
<td>کششی فرکانسی اعداد 8</td>
</tr>
</tbody>
</table>

6. \( \sec^2 \theta = ? \)

<table>
<thead>
<tr>
<th>Option</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) ( 1 - \sin^2 \theta )</td>
<td>( \sec^2 \theta = ? )</td>
</tr>
<tr>
<td>b) ( 1 + \tan^2 \theta )</td>
<td></td>
</tr>
<tr>
<td>c) ( 1 + \cot^2 \theta )</td>
<td></td>
</tr>
<tr>
<td>d) ( 1 - \tan^2 \theta )</td>
<td></td>
</tr>
</tbody>
</table>

7. Right bisector of chord of a circle always passes through the ............... of the circle.

<table>
<thead>
<tr>
<th>Option</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Radius</td>
<td>دوائر کے چمتوں کا دوائر کی عظیم دوائر کے 8</td>
</tr>
<tr>
<td>b) Circumference</td>
<td></td>
</tr>
<tr>
<td>c) Centre</td>
<td>مرکز 8</td>
</tr>
<tr>
<td>d) Diameter</td>
<td>قطر 8</td>
</tr>
</tbody>
</table>

8. A tangent line intersects the circle at ........ points.

<table>
<thead>
<tr>
<th>Option</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) 3</td>
<td>آیک ختم کی دوائر کے 8</td>
</tr>
<tr>
<td>b) 2</td>
<td></td>
</tr>
<tr>
<td>c) 1</td>
<td></td>
</tr>
<tr>
<td>d) no point at all</td>
<td>کتی نظر نہیں 8</td>
</tr>
</tbody>
</table>
SECTION – II

Q.No.2. Answer the following short questions.  

(6 × 2 = 12)

(1) Solve the equation $5x^2+8x+1=0$ by using quadratic formula.

(2) Prove that product of three cube roots of unity is “1”.

(3) If $3(4x – 5y) = 2x – 7y$, find the ratio $x : y$.

(4) Find the sets $X$ and $Y$, if $X \times Y = \{(a , a) , (b , a) , (c , a) , (d , a)\}$.

(5) Find the arithmetic mean by direct method for 12, 14, 17, 20, 24, 29, 35, and 45.

(6) What is the circular measure of the angle between the hands of the watch at 3 o’clock?
ENGLISH

Total Marks: 20

SECTION - A

Q.No.1. Encircle the correct answer from the following choices. (8×1=8)

1. Choose the appropriate synonym:
   Ancestor
   (a) antecedent  (b) successor
   (c) predecessor  (d) forefather

2. Choose the correct pronoun:
   You and I work well together. ___________ are a good team.
   (a) they  (b) we
   (c) I  (d) our

3. Identify the underlined:
   Hand me that hammer.
   (a) demonstrative pronoun  (b) reflexive pronoun
   (c) interrogative pronoun  (d) personal pronoun

4. Fill in the blank
   He asked me _________ very hard question.
   (a) the  (b) a
   (c) an  (d) as

5. The connotative meaning of “Home” is:
   (a) residence  (b) dwelling
   (c) cozy  (d) the actual building

6. Choose the correct translation:

   جارے گھر کے سامنے گھر بنا ہے۔
   (a) There was a big house in front of our house.  (b) There is a big house in front of our house.
   (c) Here is a big house beside our house.  (d) Here was a big house beside our house.
7. “In my opinion……” is an expression to:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) agree with someone</td>
<td>(b) disagree with someone</td>
</tr>
<tr>
<td>(c) express one’s hatred for someone</td>
<td>(d) express one’s point of view</td>
</tr>
</tbody>
</table>

8. Which of the following sentence is correctly changed into Past continuous tense:

I read a book.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) I have read a book.</td>
<td>(b) I was reading a book.</td>
</tr>
<tr>
<td>(c) I am reading a book.</td>
<td>(d) I have been reading this book since morning.</td>
</tr>
</tbody>
</table>

**SECTION – B**

Total Marks (12)

Attempt all questions.

Q.No.2. Use the following Pair of word in the sentences of your own. (2)

<table>
<thead>
<tr>
<th>Word</th>
<th>Sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect</td>
<td></td>
</tr>
<tr>
<td>Effect</td>
<td></td>
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<tr>
<td>Dose</td>
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<td>Doze</td>
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</tbody>
</table>

Q.No.3. What is the importance of Chinese New Year for Chinese families? (2)

Q.No.4. Change the speech of the following: (2)

1- Ali says, “I write a letter.”
2- She said, “Don’t waste your time.”

Q.No.5. Write an essay on “My Last day at School.” (6)

OR

Write a paragraph on “A Visit to a Museum.”

(Note: This question can include any type of descriptive question from the syllabus provided to test the writing ability of the students.)
## اوردو

### (عسائی)

#### سوال نمبر 1: دین ذلیل میں سے دست عہاب کا اعمال کی گئی کں(8)

<table>
<thead>
<tr>
<th>مصیر کرن کی بات</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(b)</td>
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<tr>
<td>(c)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

#### سوال نمبر 2: سیاسی قانون کی بات کی شدت کس شاہرکی تفتیش سے؟

<table>
<thead>
<tr>
<th>معلوم کرنے کی تفتیش سے?</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(b)</td>
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<tr>
<td>(c)</td>
<td></td>
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</tbody>
</table>

#### سوال نمبر 3: سیاسی قانون کی بات کی شدت کس شاہرکی تفتیش سے؟

<table>
<thead>
<tr>
<th>کتابی ثبوت</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
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<td></td>
<td></td>
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<tr>
<td>(b)</td>
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<td></td>
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<tr>
<td>(c)</td>
<td></td>
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</tbody>
</table>

#### سوال نمبر 4: یہ فرضی کانی مختار دیکھی اور وقتی کافی سے نشکل کے کس کی کچھی روشی ذائی گئی؟

<table>
<thead>
<tr>
<th>جاما</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>(b)</td>
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<tr>
<td>(c)</td>
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</tbody>
</table>

#### سوال نمبر 5: کچھ اعمال کے ابتدال کرنے اوران کے باتی متعلق کتابز کرنے کا کتنے کتنے?

<table>
<thead>
<tr>
<th>صدر اسی</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
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<td></td>
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<tr>
<td>(c)</td>
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</tbody>
</table>

#### سوال نمبر 6: سنیہ کوھرے دوسرے سے دوسرے کس نمکن ساحب ساحب عہاب کے کیہ؟

<table>
<thead>
<tr>
<th>ریاست</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
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<td></td>
<td></td>
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<tr>
<td>(c)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>سوال</td>
<td>حرف انتخابی</td>
<td>حرف دوبارہ</td>
<td>حرف انتخابی</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>(a)</td>
<td>(b)</td>
<td>(c)</td>
</tr>
<tr>
<td>2</td>
<td>(a)</td>
<td>(b)</td>
<td>(c)</td>
</tr>
</tbody>
</table>

کوئی اضافہ نہیں ہے؟ ان کو کتنے فیصد بنائی؟

- سوال	8 میں 2 ملیٰڈر فیصلہ کیے گئے تحقیق
- سوال	8 میں 8 بانگلہ مراحل میں کوئی اضافہ نہیں

اب اسلا کے ان خلاف کو جواب ہوگا

یہ اضافہ اسی مدت سے تیار ہیں جہاں آنے والے ہیں اور تم بھول گیا کہ دون فیصد اضافہ نہیں؟

سوال	8 میں 4 فیصدے کے گزارتے ہیں اضافہ کے لیے تخمینہ کیا جاتا ہے (6)
Q. No. 1. Encircle the correct answer from the following choices. 

1. Most of the gaseous exchange in a leaf occurs through:

- (a) Stomata
- (b) General surface
- (c) Cuticle
- (d) Lenticels

2. How many bronchi are there in the air passageway?

- (a) One
- (b) Two
- (c) Many
- (d) None

3. Which organ is responsible for filtering the blood?

- (a) Intestine
- (b) Brain
- (c) Stomach
- (d) Kidney

4. Insulin and glucagon are produced in the__________.

- (a) Hypothalamus
- (b) Anterior pituitary
- (c) Liver
- (d) Pancreas
5. Processes that carry nerve impulses away from the cell body are called___________.

(a) Axons  (b) Dendrites  (c) Synapses  (d) Myelin sheath

6. How many bones make our skull?

(a) 14  (b) 22  (c) 24  (d) 26

7. How many bones are in human skeleton?

(a) 206  (b) 207  (c) 208  (d) 209

8. What type of blood vessels surrounds the alveoli?

(a) Artery  (b) Arteriole  (c) Capillary  (d) Vein
Q. No. 2. Write short answers of the following questions. (6x 2 = 12)

(1) Define breathing.

(2) Define the term osmoregulation.

(3) Differentiate between stomata and lenticels.

(4) Explain haemodialysis.

(5) Explain amphysema.

(6) Write any two functions of forebrain.
PHYSICS

SECTION - I

Q. No. 1. Encircle the correct answer from the following choices. (8x 1 =8)

1. Which form of energy is sound?
   - (a) Electrical
   - (b) Thermal
   - (c) Mechanical
   - (d) Chemical

2. Waves transfer;
   - (a) Energy
   - (b) Frequency
   - (c) Velocity
   - (d) Wave length

3. Light ray bends when it enters from one transparent medium to another. This is called;
   - (a) Reflection
   - (b) Refraction
   - (c) Diffraction
   - (d) Interference

4. A capacitor holds 0.06 coulombs of charge when fully charged by a 9 volt battery. Calculate capacitance of the capacitor.
   - (a) 0.66
   - (b) 0.066
   - (c) 0.0066
   - (d) 6

5. If we double the voltage in a simple electric circuit, we double the;
   - (a) Current
   - (b) Resistance
   - (c) Power
   - (d) Both a and b
6. The presence of magnetic field can be detected by a

<table>
<thead>
<tr>
<th>(a) Magnetic compass</th>
<th>(b) Small mass</th>
<th>(c) Stationary negative charge</th>
<th>(d) Stationary positive charge</th>
</tr>
</thead>
</table>

7. Cathode ray oscilloscope has components:

<table>
<thead>
<tr>
<th>(a) Fluorescent screen</th>
<th>(b) Electron gun</th>
<th>(c) Deflecting plates</th>
<th>(d) All above</th>
</tr>
</thead>
</table>

8. The particle emitted from a hot cathode surface are

<table>
<thead>
<tr>
<th>(a) Proton</th>
<th>(b) Positive ions</th>
<th>(c) Electron</th>
<th>(d) Negative ion</th>
</tr>
</thead>
</table>

SECTION - II

Q. No. 2. Write answers to any SIX questions from the following. (6x 2 = 12)

1- What is damped oscillations?

2- What are uses of ultra sound?

3- State the types of lens.

4- Describe the process of thermionic emission.

5- What is meant by mutual induction?

6- What is the difference between conductor and insulator?
CHEMISTRY

SECTION – I

Q. No. 1. Encircle the correct answer from the following choices. (8)

1. If \( Q_c < K_c \), then reaction will be ------------------.

(a) Forward
(b) Reverse
(c) At equilibrium state
(d) None of these

2. Which one of the following substance is an acid according to Lewis concept?

(a) R-NH₂
(b) R-OH
(c) NH₃
(d) AlCl₃

3. Sodium metal test is used for the identification of ------------------------.

(a) Carboxyl Group
(b) Alcoholic Group
(c) Aldehydic Group
(d) Amino Group

4. Which one of the following is a common variety of coal and use as a household coal?

(a) Bituminous
(b) Lignite
(c) Antheracite
(d) Peat

5. The general formula of alkene is -------------------.

(a) \( C_n H_{2n+2} \)
(b) \( C_n H_{2n-2} \)
(c) \( C_n H_{2n} \)
(d) \( C_2n H_{2n-2} \)
6. Cotton is an example of pure --------------.

(a) Cellulose  (b) Sucrose  (c) Starch  (d) Lactose

7. Stratosphere extends up to ---------------- kilometers above the earth surface.

(a) 50 - 85  (b) 12 - 50  (c) 85 - 120  (d) 0 - 12

8. Which one of the following compound is an example of unsaturated hydrocarbon?

(a) Propane  (b) Methane  (c) Butane  (d) Ethene

SECTION – II

Q.No.2. Answer the following short questions. (6x2 = 12)

(1) What is the meaning of small numerical value of Kc?

Kc کیہو توئی معدی وادی کیا مطلب سے؟

(2) What is meant by double salts?

ذیل سالس سے کیا مراڈ سے؟

(3) What is meant by genetic code of life?

ذیل کودیئف لاہنت سے کیا مراڈ سے؟

(4) What is meant by isomerism?

آئو نینم سے کیا مراڈ سے؟

(5) Write down the reaction of ethyne with alkaline KMnO₄.

اکناو دیکھی کا انتزاع کے ساتوی انتزاع کسی۔ KMnO₄

(6) Write the names of any two primary air pollutants.

کونی دیوٹے کے پہوڑی پہوڑی کے تام پھرکین۔
SECTION – 1

Q. No. 1. Encircle the correct answer from the following choices. (8)

1. The grammatical rules of a programming language to write programs are referred to as of that programming language.

   a) Error  
   b) Algorithm  
   c) Syntax  
   d) Flow Chart

2. Which shortcut key is used to LOAD a GW-BASIC program?

   a) F1  
   b) F2  
   c) F3  
   d) F4

3. FOR…NEXT is used to implement.

   a) Iteration  
   b) Selection  
   c) Sequence  
   d) Function

4. Two dimensional array is also called.

   a) Table array  
   b) Matrix array  
   c) Linear array  
   d) Table or Matrix array

5. .......... function is used to return the numerical value of string.

   a) VAL  
   b) STRING $  
   c) SPC  
   d) LEN
6. A variable name must start with

<table>
<thead>
<tr>
<th>a) Alphabet</th>
<th>b) Underscore</th>
<th>c) Digit</th>
<th>d) Alphabet or Underscore</th>
</tr>
</thead>
</table>

7. LEFT$ ("PAKISTAN", 3) =?

| a) “Pak” | b) “TAN” | c) “PAK” | d) “KIS” |

8. Program upgradation refer to:

<table>
<thead>
<tr>
<th>a) Program enhancement</th>
<th>b) Program identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>c) Program development</td>
<td>d) Program implementation</td>
</tr>
</tbody>
</table>

SECTION – II

Q.No.2. Answer the following short questions. (6x2=12)

1. Why runtime errors occur in a program?

2. What is difference between KILL and DELETE command?

3. List the rules which are must followed in a BASIC program.

4. Write a program to compute the square of a given number. The program should get the number from user through INPUT statement.

5. Distinguishes between user define and built in function.

6. Explain the difference between algorithm and flowchart.