

LOGIN AND CHECK YOUR STATUS

SMITHA M R OF THE BRIGADE SCHOOL @ MALLESWARAM, BENGALURU, HAS SET A COMPUTER APPLICATIONS MOCK PAPER FOR YOU

GENERAL INSTRUCTIONS

- This paper is divided into two sections.
- Attempt all questions from Section A and any four questions from Section B.
- The intended marks for questions or parts of questions are given in brackets []

SECTION-A (40 MARKS)

Attempt all questions

- Q1 a)** What is a base class and a derived class? Which concept of OOPS is implemented here? [2]
b) Explain the Java feature "write once run anywhere". [2]
c) What is the similarity between a for loop and a while loop? [2]
d) What is a compound statement? Give an example. [2]
e) Explain the working of the conditional operator with the help of an example. [2]

- Q2 a)** State the method that:
 (i) converts a string to a primitive float data type.
 (ii) determines if the specified character is in uppercase. [2]
b) What will be the output of the following code segment? [2]

```
public void main() {
    int x[] = {4,8,12,16,20,24};
    int m,n,k;
    m=x[1];
    n=x[2]+1;
    k=x[3];
    System.out.println(m+n+k);
}
```


c) Explain double dimensional array with an example. [2]
d) In the program given below, state the name and the value of the:
 (i) method argument or argument variable
 (ii) class variable(s)
 (iii) local variable(s)
 (iv) instance variable(s)

```
class XYZ
{
    Static int x=7;
    int y=2;
    public static void main(String args[] )
    {
```



```
XYZ b1=new XYZ();
System.out.println(x);
b1.abc(5);
int a=6;
System.out.println(a);
}
```

```
void abc(int n)
{
    System.out.println(n);
    System.out.println(y);
}
```

- e)** Convert the following while loop to for loop: [2]

```
int p=5, q=10;
while (q>=1)
{
    System.out.println(p*q);
    q--;
}
```

- Q3 a)** Explain the concept of constructor overloading with an example. [2]
b) Differentiate between print() and println(). [2]
c) Write java expression for:
 $\frac{(a+b)^n}{a^n + 5b^n}$ [2]
d) Write the value of res:
 $res = 18 > 2 ? 3 > 4 ? 6 : 2 : 15 > 2 ? 7 : 5;$ [2]
e) Write the output of the given code snippet: [2]

```
String x= " is your name in this list";
int n=5;
int i1=x.indexOf('i');
System.out.println(x.substring(2,5) + " " + i1);
```

- f)** Write the output of the following code segment: [2]

```
String s1="computer";
String s2="car";
int n=s1.compareTo(s2);
System.out.println(n);
```

- g)** What is Auto boxing? Give an example. [2]
h) Analyze the given program segment and answer the following questions: [2]
 (i) Write the output of the program segment.
 (ii) How many times does the body of the loop get executed?

```
for(int s=4; s<=20; s+=4)
{
```

```
if(s%4 == 0)
    break;
else
    if(s%5 == 0)
        System.out.println(s);
    continue;
}
```

- i)** Give the output of the following expression: [2]
 $m++ + m++ + -m + m--;$
 when $m = 2$

- j)** Write the return type of the following library functions:
 (i) isLetterOrDigit(char)
 (ii) replace(char,char)

SECTION-B (60 MARKS)

Attempt any Four questions from this Section.

- The answers in this Section should consist of the Programs in either Blue J environment or any program environment with Java as the base.

- Each program should be written using Variable descriptions/Mnemonic Codes such that the logic of the program is clearly depicted.

- Flow-Charts and Algorithms are not required.

- Q4** Define a class named Interest with the following description: [15]

Instance variables / Data members:
 String name - stores the name of the person.
 double fd - stores the fixed deposits made by the person.
 int time - stores the duration of the fixed deposit made

Member Methods:

- (i) Interest() - Default constructor to initialize data members.
 (ii) void Input() - To input and store the name, time period and the fixed deposit amount made by the person.
 (iii) void calculate() - To calculate the interest based on the following criteria.
 (iv) void display() - To display the name, fixed deposit amount and the Interest received.

Time	Rate of Interest
Up to 6 months	6%
Above 6 months and up to 12 months	7%
Above 12 months and up to 36 months	7.5%
Above 36 months	7.75

Write a main method to create an object of the class and call the above

- member methods.
Q5 Write a program to accept a binary number and print its decimal equivalent. [15]

- Q6** Write a menu driven program to [15]
 (i) find the smallest word in a given string
 (ii) check if the given word is a special word.

Hint:
 Smallest word:

Input : computer applications
 Output : computer
 Special Word: starts and end with same letter
 Input : WINDOW Output : WINDOW

- Q7** Write a program to accept numbers into a 3X4 matrix. Display the original array. Then calculate and display the sum of each column. [15]

- Q8** Write a program to accept a number and check whether it is an Emirp number or not.

Hint: An Emirp number is a number which is prime even when its digits are reversed.

Example: 13 is an Emirp number as both 13 and 31 are prime numbers. [15]

- Q9** Design a class to overload a function cal() as follows: [15]

- (i) void cal(int n, double x) - with one integer argument and one double argument to find the sum of the series
 $s = x - \frac{x^2}{2!} + \frac{x^3}{4!} - \frac{x^4}{6!} + \dots$, up to n terms

- (ii) void cal() - To display the following pattern

```
5 4 3 2 1
4 3 2 1
3 2 1
2 1 1
```

These questions and the marks alongside are meant for practice purposes only. Students are advised to check format, syllabus and marks for Board test papers with their teachers. Questions have been given by teachers and NIE is not responsible for them.

DEVELOPING STUDY HABITS

START EARLY IN LIFE!



Preparing for examinations needs a steady pattern of study habits that should be developed over the years – right from pre-school. It is a continuous process and cannot, and does not, happen a day before, two days before or a week before the exam. Check these consistent study habits that should be inculcated:

- A systematic approach and habit formation are important
- Study on your own; try to complete your homework without anyone's help
- Sit with your books for at least half an hour daily
- Whether it's a school day or a holiday, whether homework is given or not, sit and read books for some time every day
- Read aloud. This is very important as it helps you to focus on what is being read

- If you are just reading without understanding, you will not develop retention and recollection capacity
- To understand concepts, be regular at school; ensure you attend lectures
- Simply copying notes from friends will not help in understanding concepts
- Remember, learning to write for exams is just like playing a video game – the more you write on your own, the better you become at it
- Students of class V or VI must talk to each other about how much revision they have completed, the methods they are using to revise, etc.
- Take down running notes in class from class VII onwards. It helps to focus and minimises any distraction in class



Dos and Don'ts



PREPPING UP FOR EXAMS

If you are one of those lazy kinds, who leaves everything for the last minute, remember your 'fire fighting' must still begin two months before exams. I call it 'fire fighting', because the diligence, effort and techniques for studying that had to be followed for the whole year were not done. In this case, it will have to be done just before the exams.

- Read chapters repeatedly. As you read the chapters, make a one-page graphic organiser of every chapter to suit your learning process.
- Maintain a notebook per subject so that you have the visual

picture of all chapters in one place. It helps to increase the learning process and puts the content in long term memory.

- To attempt objective type answers and short answers, thorough knowledge of content is important. This gets you around

Students must take responsibility for their own learning and stop 'blaming' parents, teachers and friends for not being able to concentrate, for getting distracted, for not understanding and so many other things

40 to 50 per cent marks.

- To score more marks, a deep understanding of the content is required; for that writing practice of long answers is compulsory.

- During exam time, a student's recollection has to be quick and accurate, so your memorisation has to be such that you can access your brain like the RAM of a computer, or you fall short of time.

- Before exams, social life should be more controlled and the number of study hours must be increased.

- Food and exercise are also important, so drawing up a daily time-table and following it helps. Success is one per cent intelligence, nine per cent inspiration and 90 per cent perspiration.

IN THE EXAMINATION HALL

- First and foremost, ensure a good night's sleep before exam day. Last minute reading does not help much!
- In the exam hall, be calm. If you find it difficult to remain calm, breathe and count rhythmically to yourself.
- Read the question paper thoroughly before beginning to write the answers.
- If allowed, wear a watch and time yourself. If you do not have a watch, ask the invigilator to prompt you at the end of every hour.
- Answer questions in a sequence as far as possible, and always keep parts of a question together. Leave sufficient space, it can always be written later. In case you cannot write it later, then draw a line across that space.
- Ensure you have 10 minutes in hand before examination time ends so that you can check and revise your paper and make certain you have tied all the additional and necessary papers like maps and graphs.
- Write the long answers that

you know, followed by short answers. This is for those who look for short cuts. Move on to the questions that you find difficult and then to the ones you are not sure about. Write answers as per the marks allotted to a question.

- A 2 mark question deserves a four sentence answer, whereas a 5 mark question deserves a detailed answer: If you do a vice versa, the examiner will not give you 3 out of 2 but you can definitely get 2 out of 5 for a badly written long answer.
- Never leave any question out! Write whatever you can recollect.
- Ensure you write neatly, in legible handwriting. This is academic writing work – do not use multi-coloured pens and pencils.
- Use relevant colours when required. Write answers with subheads and in point form – a basic rule that can be followed for all subjects.



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When passion merged with profession

It was a tough journey, Jasprit Bumrah's mother Daljit shares her son's story...

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Parents always want the best for their children. Like every loving parent Daljit Bumrah, too, had dreamt of a stable career for her child, one that would shine like a rainbow at all times to come. A career that would provide for everything – right from fat paychecks to intellectual stimulation.

The successful career landscape she had envisioned could only be charted by the path of education. However, Jasprit, since childhood, slept, ate and dreamt only of cricket. During study hours, he would hunt for excuses to run out and play cricket. And as an educator herself, this tormented her: "I wanted him to study hard and stand on his feet. But education was nowhere on his mind."

When her anxiety levels reached an all-time high, she communicated with her son. "His passion and interest in the game convinced me and I finally decided to support him in his journey amid all financial constraints," says Daljit.

This interaction and subsequent efforts by Jasprit helped Daljit evolve as a person. "I was able to see beyond academics. The way my son endured tremendous pressure of performance, made consistent efforts to improve the game and worked on his gradual success, changed me as a person as well," she says.

Rising above societal pressure and allowing Jasprit to chase his dream, the proud mother says, "is crucial – listen to your children and give them the freedom to pursue their pas-



sion. It is okay, if they fail, we as parents should be beside them and guide them." She signed off saying, "Earlier, people use to say Daljit madam's son, today they say, Jasprit's mother. It is indeed, my moment of pride."

