

Final exam BS Dental Technology, Iqra National University,
Peshawar

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Semester: 4th

Course: Microbiology

BS Dental Technology

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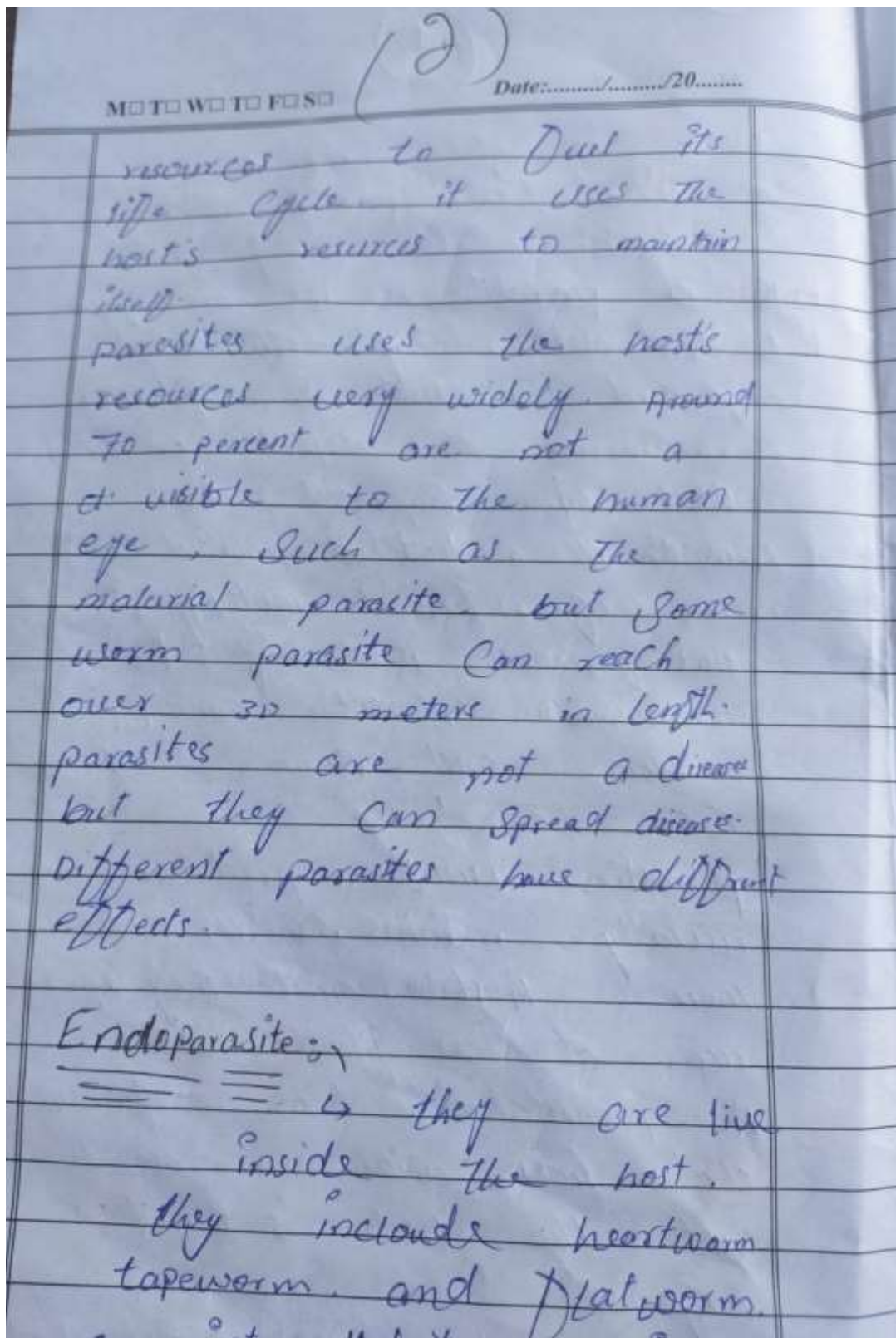
Q. What is parasite?

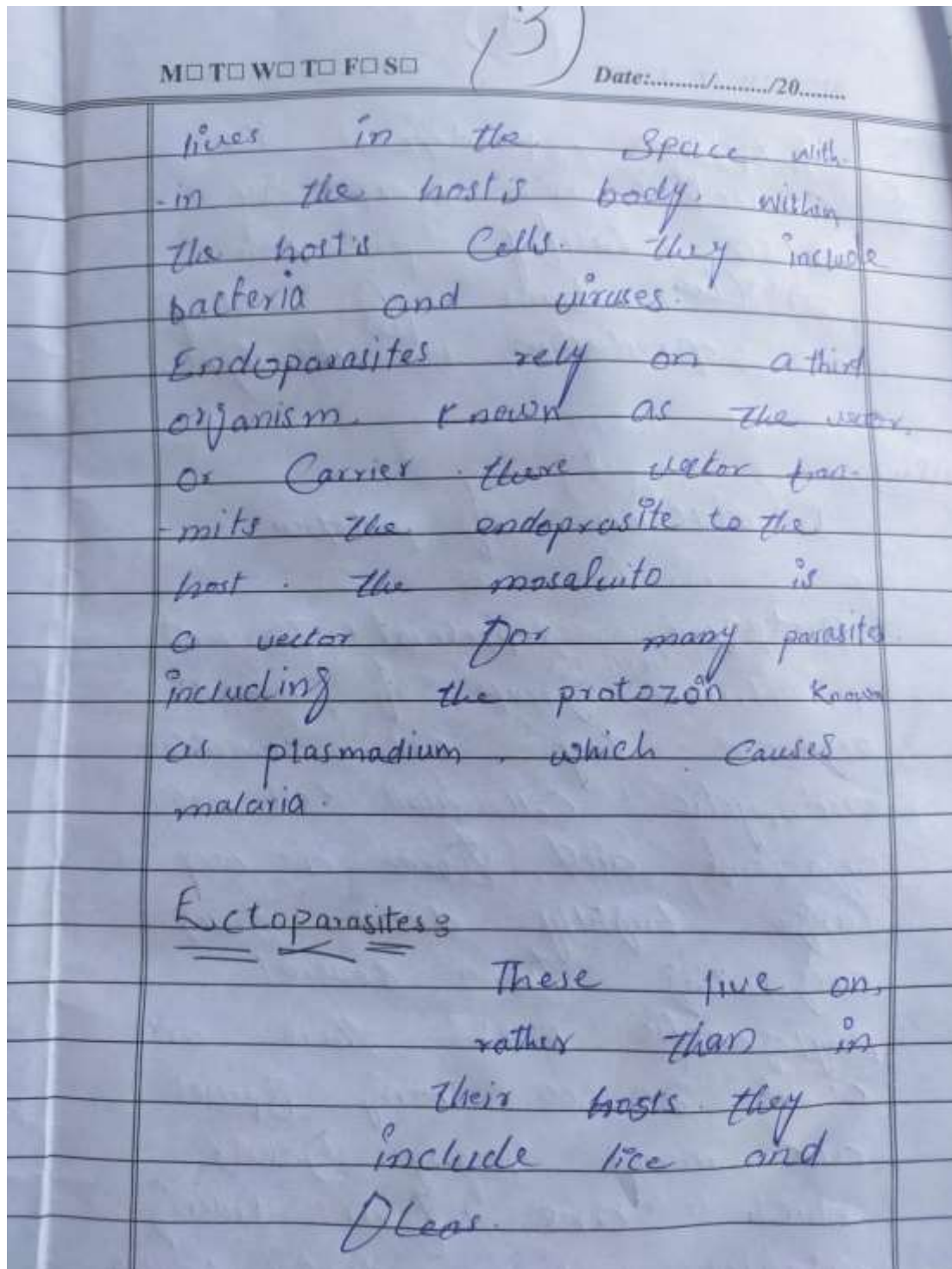
Ans. A parasite is an organism that lives in another organism called the host. and often harms it. it depends on its host for survival. without a host a parasite cannot live, grow and multiply. For this reason, it rarely kills the host but it can spread diseases, and some of these can be fatal.

parasites, unlike predators, are usually much smaller than their host and they reproduce at a faster rate.

A parasite is an organism that lives within or on a host. the host is another organism.

The parasite uses the host's





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- (Q) Explain protozoa, its characteristics and morphology, also classify protozoa on the basis of motility and reproduction into its types.

ANS

Introduction of protozoa

Protozoa represent the most primitive group of animal organism. They are unicellular eukaryotic cell wall-less motile organisms and form a very large highly diverse group originating from several phylogenetic lines. There are about 20,000 living species and many many more which are free living organisms in aquatic habitats.

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Some are parasitic and pathogenic. Others are symbiotic or commensal organisms. Protozoa form an important link in the food chain of aquatic environments.

Characteristics of Protozoa

On the basis of gross cell morphology and motility, protozoa are distinguished into four major types. These are flagellates, amoebae, ciliates and spore-forming protozoa. Although all of these types are unicellular, they exhibit a considerable diversity in size and form.

(b)

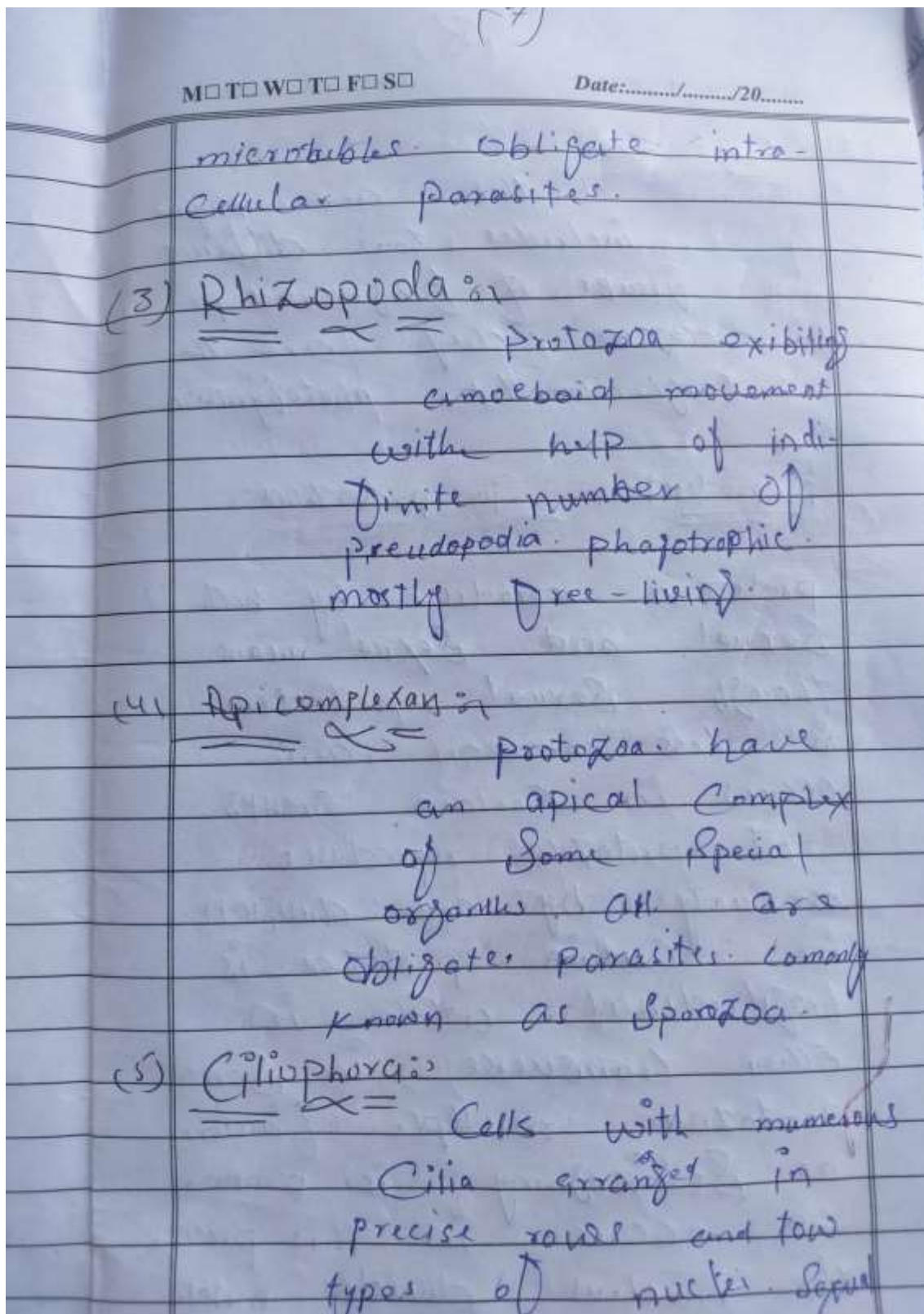
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The parasitic Zoo flagellate
 Leishmania donovani measures
 only 1 μm to 4 μm in
 length which is comparable
 with the size of average
 bacteria. On the
 other extreme some amoebae
 can be as large as 600
 μm in diameter. Some
 fossil protozoa are even
 larger size.

Classification of protozoa

(1) archezoa :-
 ↳ protozoal cell with
 out mitochondria.
 ↳ Flagella two or
 more emerging from
 the anterior end.
 ↳ Cysts may be present.

2) microsporidia :-
 Cell without
 mitochondria and



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(b) Euglenozoa: - this are phylum includes two different groups of flagellated protozoa. They are the Euglena-like photosynthetic.

Reproduction in protozoa:

protozoa reproduce by both sexual and asexual means. though asexual reproduction is less common and occurs in certain groups. most protozoa reproduce asexually by cell division. in certain protozoa is longitudinal, while in other transverse. in some protozoa multiple fission or Schizogony is known to occur. in this process the nucleus divides mitotically.

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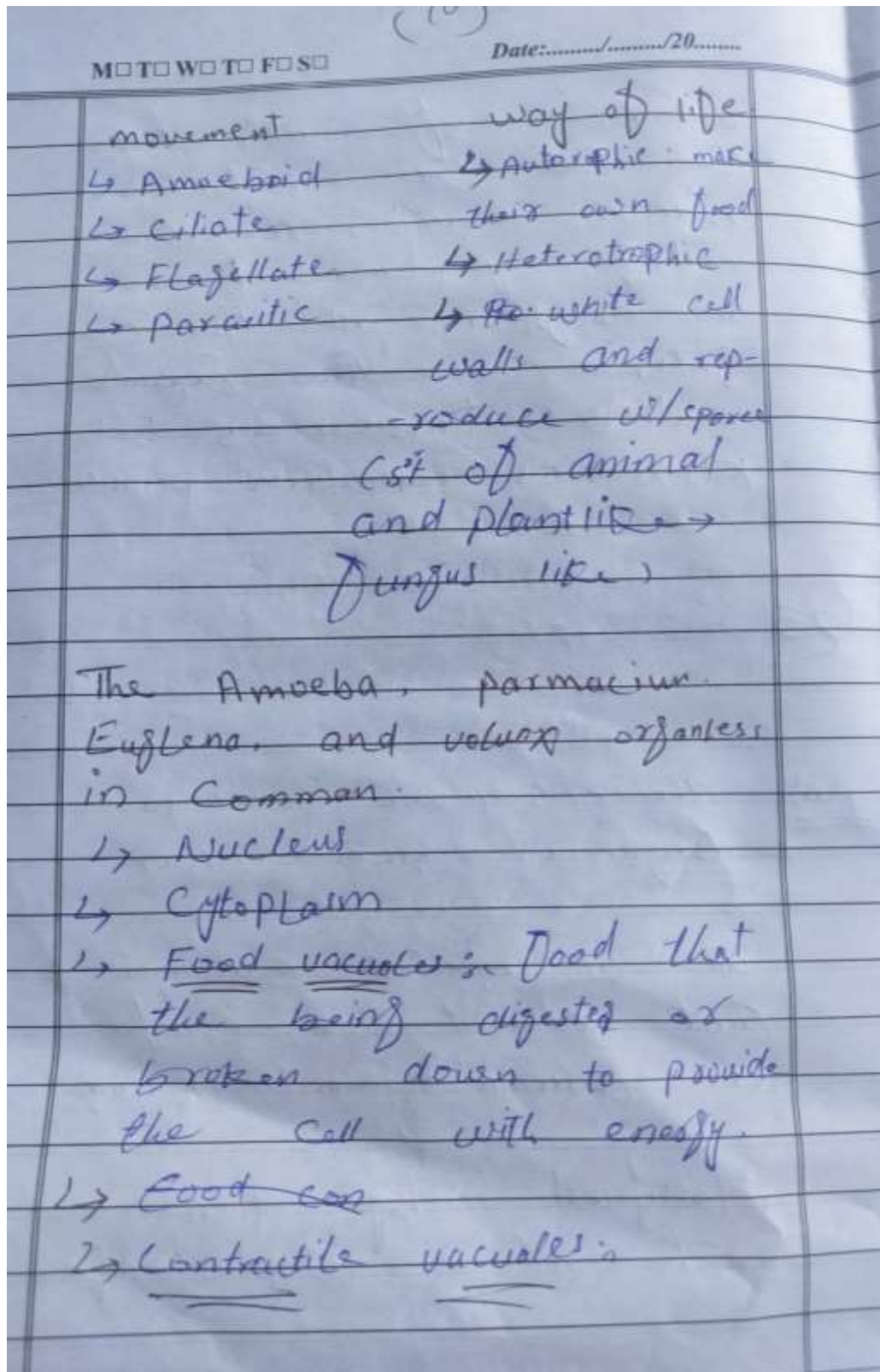
number of nuclei before the cell divides. Each nucleus with the surrounding cytoplasm forms a daughter cell. The daughter cells then separate. Multiple fission is better known as malarial parasite.

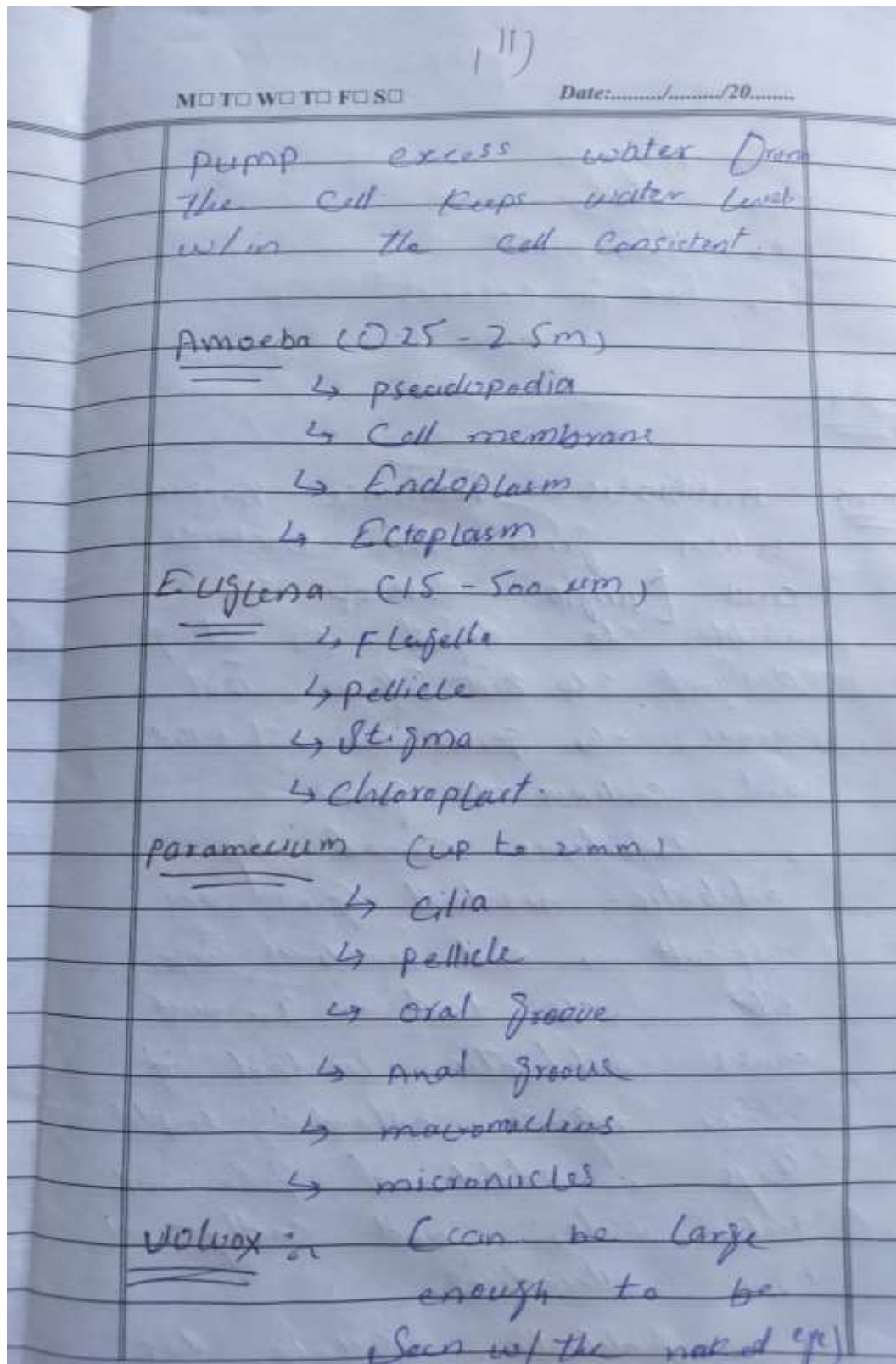
Q3

Ans The amoeba, paramecium, Euglena, and volvox

all are protists eukaryotes that cannot be classified as animals, plants or fungi.

Classified by their movement and way of life.





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1 → flagella
 2 → Cytoplasm
 3 → Chloroplasts
 4 → live in colonies

Q 4:

Ans Antibiotic resistance happens when germs like bacteria and fungi develop the ability to defeat the drugs designed to kill them. That means the germs are not killed and continue to grow.

Infections caused by antibiotic-resistant germs are difficult, and sometimes impossible, to treat. In most cases antibiotic-resistant infection require extended hospital stays, additional follow-up doctor visits, and costly and toxic alternatives.

Antibiotic resistance does

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mean - the body is becoming resistance to antibiotics; it is that bacteria have become resistant to the antibiotics designed to kill them.

Antibiotic Resistance Threatens Everyone

Antibiotic resistance has the potential to affect people at any stage of life, as well as the healthcare, veterinary, and agriculture industries, making it one of the world's most urgent public health problems.

Each year in the U.S. → at least 2.5 million people are infected with antibiotic-resistant bacteria or fungi, and more than 35,000 people die as a result.

Brief History of Resistance and Antibiotics

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Penicillin, the first commercialized antibiotic, was discovered in 1928 by Alexander Fleming. Ever since, there has been discovery and acknowledgment of resistance alongside the discovery of new antibiotics. In fact, germs will always look for ways to survive and resist new drugs. More and more, germs are sharing their resistance with one another, making it harder for us to keep up.

↳ Antibiotics disrupt essential structures or processes in bacteria. This in turn either kills the bacterium or stops them from multiplying. Bacteria have in turn evolved many antibiotic resistance mechanisms to withstand the actions of antibiotics.

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→ Think about the problem and its causes

The first step before any strategy development or advocacy intervention is to identify the problem and its underlying causes. Only through analysing the causes of the problem will you be able to see which interventions or advocacy strategies will be most appropriate to tackling it. The underlying issue (or cause) may not be obvious and many need several approaches to understand the problem, including participatory exercises involving affected community members, desk-based research or interviews.

Q = no = 05

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Ans.

Bacterial Infectivity

Bacterial infectivity results from a disturbance in the balance b/w bacterial virulence and host resistance. The "objective" of bacteria is to multiply rather than to cause disease; it is in the best interest of the bacteria not to kill the host.

Host Resistance :-

Numerous physical and chemical attributes of the host protect against bacterial infection. These defenses include the antibacterial factors in secretions covering mucosal surfaces and rapid rate of replacement of skin and mucous

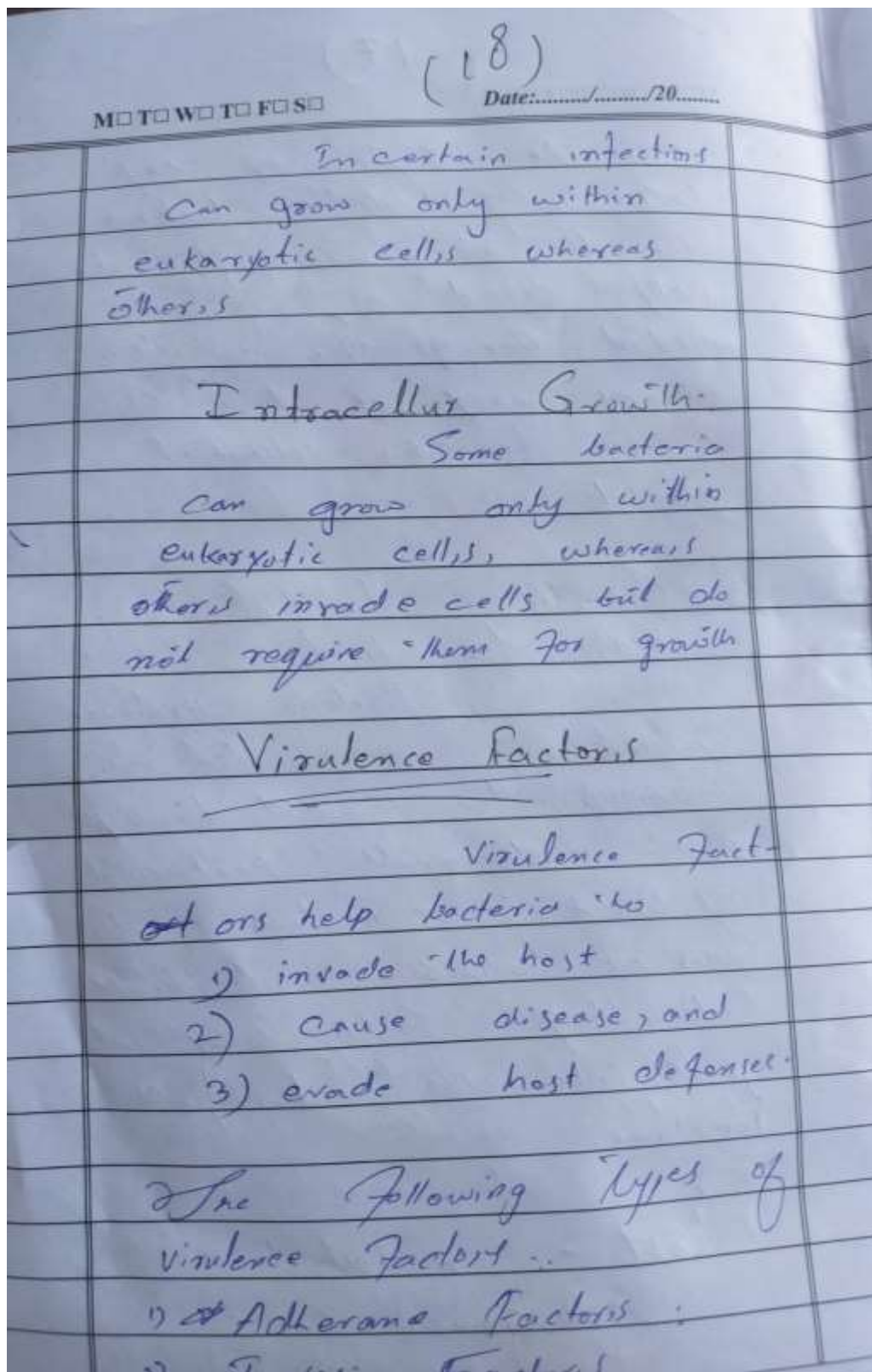
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Once the surface of the body is penetrated, bacteria encounter an environment virtually devoid of free iron needed for growth, which requires many of them to scavenge for this essential element.

Genetic and Molecular Basis for Virulence:

Bacteria virulence factors may be encoded on chromosomal, plasmid transposon, or temperate bacteriophage DNA; nonvirulence factor genes on transposons or temperate bacteriophage DNA may integrate into the bacterial chromosome.

Host - mediated Pathogenesis: -



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3) Capsules :

4) Endotoxins .

5) Exotoxins .

6) Siderophores .