



# Chapter



## FUNGI The Kingdom of Recyclers

### TOPIC-WISE MULTIPLE CHOICE QUESTIONS INTRODUCTION & BODY OF FUNGUS

#### MCQs

- (1) Approximately \_\_\_\_\_ species of fungi are known:
  - (a) 60,000
  - (b) 75,000
  - (c) 80,000
  - (d) 100,000
- (2) Fungi resemble more with \_\_\_\_\_ than \_\_\_\_\_.
  - (a) Plants, animals
  - (b) Animals, fungi-like protists
  - (c) Algae, plants
  - (d) Animals, plants
- (3) Long, slender, branched tubular filaments in fungi are:
  - (a) Mycelia
  - (b) Basidia
  - (c) Hyphae
  - (d) Conidia
- (4) Multinucleated hyphae with continuous cytoplasm can be:
  - (a) Aseptate
  - (b) Monokaryotic septate
  - (c) Dikaryotic septate
  - (d) Septate
- (5) Growth rate is high in hyphae:
  - (a) Septate
  - (b) Aseptate
  - (c) Dikaryotic
  - (d) Monokaryotic
- (6) The study of fungi is called:
  - (a) Mycology
  - (b) Ecology
  - (c) Fungi biology
  - (d) Parasitology
- (7) Chitin in fungi is more resistant than:
  - (a) Cellulose
  - (b) Lignin
  - (c) Both of these
  - (d) None of these
- (8) Coenocytic hyphae are:
  - (a) Septate and dikaryotic
  - (b) Septate and monokaryotic
  - (c) Non septate and multinucleated
  - (d) Non septate and diploid
- (9) \_\_\_\_\_ is a pathogenic fungus afflicting conifers.
  - (a) Yeasts
  - (b) Mushrooms
  - (c) Armillaria
  - (d) Rusts
- (10) Only diploid structure in fungi.
  - (a) Zygote
  - (b) Gametes
  - (c) Spores
  - (d) Dikaryotic hyphae
- (11) DNA study of fungi confirm that they are:
  - (a) Animals
  - (b) Plants
  - (c) Heterotrophic algae
  - (d) Different from all other organism
- (12) Coenocytic hyphae are mostly present in:
  - (a) Ascomycetes
  - (b) Basidiomycetes
  - (c) Zygomycetes
  - (d) Deuteromycetes

- (13) **In nuclear mitosis, mitotic spindles are formed:**  
 (a) Within the cytoplasm (b) Within the nucleus  
 (c) By endoplasmic reticulum (d) Not formed at all
- (14) **Fungi which do not have hyphae:**  
 (a) Yeast (b) Mushroom  
 (c) Truffles (d) Morels
- (15) **The closest relatives of fungi are probably:**  
 (a) Animals (b) Slime molds  
 (c) Brown algae (d) Vascular plants
- (16) **Which of the following is a major structural component of fungus cell wall:**  
 (a) Cellulose (b) Peptidoglycan  
 (c) Chitin (d) Lignin
- (17) **Fungi are heterotrophs, lack cellulose in their cell wall and contain a chemical found in external skeleton of arthropods:**  
 (a) Cutin (b) Lignin  
 (c) Pectin (d) Chitin
- (18) **Which is absent in fungi?**  
 (a) Chlorophyll (b) Hyphae  
 (c) Glycogen (d) Chitin

**NUTRITION IN FUNGI**

**KIPS MCQs**

- (19) **Saprobic fungi anchor to the substrate through modified hyphae called:**  
 (a) Rhizome (b) Rhizoids  
 (c) Haustoria (d) Stolons
- (20) **Parasitic fungi absorb nutrients directly from:**  
 (a) Host nucleus (b) Host mitochondria  
 (c) Host cytoplasm (d) Host cell wall
- (21) **Haustoria are:**  
 (a) Special hyphae in symbiotic fungi (b) Special hyphae in predators fungi  
 (c) Special hyphal tips in saprobic fungi (d) Special hyphal tips in parasitic fungi
- (22) **Fungi that can that can grow only on their living host:**  
 (a) Saprobian fungi (b) Obligate parasites  
 (c) Facultative parasite (d) None of these
- (23) **Mildews are:**  
 (a) Saprobian fungi (b) Obligate parasites  
 (c) Facultative parasite (d) None of these
- (24) **Lichens are mutualistic symbiotic associations between:**  
 (a) Fungi and green algae (b) Fungi & plants  
 (c) Fungi & cyanobacteria (d) Both a & c
- (25) **In lichen, fungi provide protection to partner from:**  
 (a) Intense light (b) Desiccation  
 (c) Both a & b (d) Infection
- (26) \_\_\_\_\_ percentage of vascular plants have mycorrhizae association.  
 (a) 50% (b) 90%  
 (c) 95% (d) 100%
- (27) **In mycorrhizae association, fungal hyphae help in:**  
 (a) Increasing amount of soil contact (b) Total surface area for absorption  
 (c) Directly absorption of P, Zn, Cu etc (d) All of these

- (28) Association found in pines is:  
 (a) Foliose lichen (b) Fruticose lichen  
 (c) Ectomycorrhizae (d) Endomycorrhizae
- (29) Fungi that can be cultured in artificial growth medium:  
 (a) Saprobic fungi (b) Obligate parasites  
 (c) Facultative parasite (d) None of these
- (30) Fungi store surplus food as:  
 (a) Starch (b) Glycogen  
 (c) Lipid droplets (d) Both 'b' & 'c'
- (31) Fungi are heterotrophs like animals but they are different than animal because:  
 (a) They produce enzyme  
 (b) They first digest the organic food and then absorb  
 (c) They lack chlorophyll  
 (d) They obtain food from dead organic matter
- (32) Example of active predator fungi:  
 (a) *Arthrobotrys* (b) *Pleurotus ostreatus*  
 (c) *Armillaria* (d) Both a & b
- (33) Which of the following does not take part in the formation of lichen?  
 (a) Zygomycetes (b) Basidiomycetes  
 (c) Ascomycetes (d) Deuteromycetes
- (34) Most of the visible part of lichen consist of:  
 (a) Fungi (b) Algae  
 (c) Dead organic matter (d) None of these
- (35) Example of Foliose lichen:  
 (a) *Bacidia* (b) *Parmelia*  
 (c) *Ramalina* (d) *Lecanora*
- (36) Fungi can tolerate the pH range from:  
 (a) 7-14 (b) 6-11  
 (c) 2-7 (d) 2-9
- (37) Fungi grow best in:  
 (a) Aquatic habitat (b) Moist habitat  
 (c) Dry habitat (d) Equally in all habitats
- (38) Most of the visible part of the lichen consist of:  
 (a) Fungi (b) Algae  
 (c) Roots (d) Bacteria

**PAST PAPER MCQs**

- (39) Lichens are very good bio indicators of : (SGK 2019)  
 (a) Air quality (b) Soil quality  
 (c) Water quality (d) Minerals quality
- (40) Which of following is important as bioindicator air pollution? (MLT 2021)  
 (a) Yeast (b) Lichen  
 (c) Rust fungi (d) Mycorrhizae
- (41) Lichen is symbiotic association between fungi and: (MLT 2021)  
 (a) Lycopods (b) Phototrophs  
 (c) Pteropsida (d) Angiosperms
- (42) Some fungi are used to control environmental pollution, the process is called: (SRD 2019)  
 (a) Biological control (b) fungal culture  
 (c) Bioremediation (d) Hydroponic

- (43) Fungi grow best in the habitat \_\_\_\_\_. (GRW 2022)  
 (a) Dry (b) Moist  
 (c) Hot (d) Cold
- (44) Example of fruticose lichen is: (BVL 2022)  
 (a) Bacidia (b) Lecanora  
 (c) Parmelia (d) Ramalina
- (45) Fungi grow best in the habitat \_\_\_\_\_. (GRW 2022, RWP -2022)  
 (a) Dry (b) Moist  
 (c) Hot (d) Clod
- (46) The lichens are bio indicators of: (SRG 2022)  
 (a) Pollution (b) Soil pollution  
 (c) Water pollution (d) Air potation

**REPRODUCTION**

**KIPS MCQs**

- (47) Spores in fungi are always:  
 (a) Sexual (b) Haploid and non motile  
 (c) Asexual (d) Few in number
- (48) What is incorrect about conidia?  
 (a) They are produced in chain or cluster (b) Produced in large number  
 (c) Produced in sporangia (d) Can survive for weeks
- (49) Karyogamy does not take place immediately after plasmogamy in:  
 (a) Zygomycetes (b) Ascomycetes  
 (c) Basidiomycetes (d) Both b & c
- (50) Two nuclei of different genetic makeup:  
 (a) Dikaryotic (b) Heterokaryotic  
 (c) Monokaryotic (d) Multinucleated
- (51) Sexual spore are usually:  
 (a) Haploid (b) Diploid  
 (c) Polyploid (d) None of these
- (52) Basidiospores and ascospores are formed by:  
 (a) Mitosis (b) Meiosis  
 (c) Amitosis (d) Binary fission

**PAST PAPER MCQs**

- (53) Which of the following structure is associated with asexual reproduction in fungi: (SGD 2017)  
 (a) Ascospore (b) Basidiospore  
 (c) Conidia (d) Zygosporangium
- (54) All fungi nuclei are haploid except for transient diploid. (LHR 2018)  
 (a) Spores (b) Zygote  
 (c) Conidia (d) Zygosporangium
- (55) Nuclear fusion in basidium is followed by: (LHR 2021)  
 (a) Meiosis (b) Mitosis  
 (c) Budding (d) Binary fission
- (56) Karyogamy occurs immediately after plasmogamy in: (MLT 2022)  
 (a) Zygomycetes (b) Basidiomycetes  
 (c) Ascomycetes (d) Deuteromycetes

**CLASSIFICATION****KIPS MCQs**

- (57) Classification of fungi is primarily based on their:
- (a) Structure (b) Hyphae  
(c) Methods of reproduction (d) None of these

**ZYGOMYCOTA****KIPS MCQs**

- (58) Classification of fungi is primarily based on their:
- (a) Structure (b) Hyphae  
(c) Methods of reproduction (d) None of these
- (59) Zygote in zygomycetes forms:
- (a) Zygosporangium (b) Sporangiospore  
(c) Spore (d) Gametangia

**PAST PAPER MCQs**

- (60) *Rhizopus* belongs to the phylum: (LHR 2017)
- (a) Ascomycota (b) Basidiomycota  
(c) Zygomycota (d) Deuteromycota
- (61) *Rhizopus* belongs to class: (MLT 2019)
- (a) Deuteromycetes (b) Ascomycetes  
(c) Basidiomycetes (d) Zygomycetes
- (62) *Aspergillus* belongs to Phylum: (SRG 2021, RWL 2019)
- (a) Zygomycota (b) Deuteromycota  
(c) Ascomycota (d) Basidiomycota

**ASCOMYCOTA****KIPS MCQs**

- (63) Largest group of fungi is:
- (a) Zygomycota (b) Ascomycota  
(c) Basidiomycota (d) Deuteromycota
- (64) Which one is known as the largest group of fungi:
- (a) Zygomycota (b) Ascomycota  
(c) Basidiomycota (d) Deuteromycota
- (65) Ascomycota includes over:
- (a) 50,000 species (b) 60,000 species  
(c) 65,000 species (d) 70,000 species
- (66) Inside each ascus, how many ascospores are produced:
- (a) 1 (b) 4  
(c) 8 (d) Many
- (67) Conidia are common mean of asexual reproduction in:
- (a) Zygomycota & ascomycota (b) Ascomycota & basidiomycota  
(c) Basidiomycota & deuteromycota (d) Deuteromycota & ascomycota
- (68) \_\_\_\_\_ is the most commonly exploited yeast:
- (a) *Rhizoderula* (b) *Candida albicans*  
(c) *Saccharomyces cerevisiae* (d) None of these
- (69) Inside each ascus, how many ascospores are produced:
- (a) 1 (b) 4  
(c) 8 (d) Many

**PAST PAPER MCQs**

- (70) As a result of meiosis, the number of ascospores produced in each ascus is: (CRW 2012)  
 (a) 06 (b) 07  
 (c) 08 (d) 05
- (71) Unicellular fungi which is non hyphal is (DGK 2021)  
 (a) Yeast (b) Mushroom  
 (c) Alternaria (d) Penicillium
- (72) Typical example of Phylum Basidiomycota is: (BWP 2021)  
 (a) Penicillium (b) Rhizopus  
 (c) Pleocbolus (d) Mushrooms
- (73) It is non hyphal unicellular fungi: (FSD 2021)  
 (a) Bacteria (b) Rust  
 (c) Yeast (d) Smut
- (74) The number of ascospores in each ascus are: (SWL 2022)  
 (a) 2 (b) 4  
 (c) 6 (d) 8
- (75) Yeasts are unicellular: (DGK 2017, FSD 2022)  
 (a) Algae (b) Protozoana  
 (c) Fungi (d) Bacteria

**BASIDIOMYCOTA**

**KIPS MCQs**

- (76) Basidiomycetes are commonly called as:  
 (a) Conjugating fungi (b) Club fungi  
 (c) Sac fungi (d) Imperfect fungi
- (77) Spores of rust are:  
 (a) Black (b) Dusty  
 (c) Brick-red (d) Both 'a' & 'b'
- (78) Teliospores are dispersed through:  
 (a) Insects (b) Water  
 (c) Wind (d) All of these
- (79) The gills on underside of mushroom's cap are lined with:  
 (a) Ascocarps (b) Basidiocarps  
 (c) Conidia (d) Sporangia
- (80) Smut in wheat is caused by:  
 (a) *Ustilago myadis* (b) *Ustilago tritici*  
 (c) *Puccinia* (d) Both a & b
- (81) Which one is known as death angel?  
 (a) Agaricus (b) Truffles  
 (c) Aspergillus (d) Amanita
- (82) Rust fungi belong to genus:  
 (a) *Ustilago* (b) *Aspergillus*  
 (c) *Puccinia* (d) Yeast

**PAST PAPER MCQs**

- (83) Loose smut of wheat is caused by the following fungi: (SWL 2017)  
 (a) Puccinia (b) Pencillium  
 (c) Ustilago (d) Asperillus

- (84) **Most common smut fungi are:** (LHR 2019)  
 (a) Ustilago (b) Puccinia  
 (c) Pencillium (d) Yeast
- (85) **Loose smut of wheat is caused by:** (LHR 2019)  
 (a) Ustilago (b) Pencillium  
 (c) Aspergillus (d) Alternaria
- (86) **Ustilage species are most common:** (MLT 2019)  
 (a) Rust fungi (b) Smut fungi  
 (c) Mold (d) Yeast
- (87) **Colour of spores of smuts is:** (SWL 2021)  
 (a) Brown (b) Yellow  
 (c) Black (d) Blue
- (88) **Corn smut is caused by:** (LHR 2022)  
 (a) Candida albicans (b) Aspergillus fumigatus  
 (c) Penicillium notatum (d) Ustilago maydis
- (89) **The mushrooms whose gills glow in the dark:** (DGK 2022)  
 (a) Amanita (b) Omphalotus  
 (c) Agaricus (d) Amphalotus

**DEUTEROMYCOTA**

**KIPS MCQs**

- (90) **Alternaria is an example of:**  
 (a) Zygomycota (b) Ascomycota  
 (c) Basidiomycota (d) Deuteromycota
- (91) **Which of the following is incorrect about penicillium:**  
 (a) Hyphae are septate (b) Brush-like arrangement of conidia  
 (c) Belongs to Ascomycetes (d) Saprotrophic example of fungi
- (92) **Green mold is:**  
 (a) Rhizopus (b) Penicillium  
 (c) Aspergillus (d) Both b & c
- (93) **Parasexuality is found in:**  
 (a) Ascomycota (b) Zygomycota  
 (c) Basidiomycota (d) Deuteromycota
- (94) **The imperfect fungi is also called:**  
 (a) Basidiomycetes (b) Ascomycetes  
 (c) Deuteromycetes (d) Basidiospores
- (95) **Brush-like arrangement of its conidia is characteristic of:**  
 (a) Rhizopus (b) Penicillium  
 (c) Ustilago (d) Agaricus

**PAST PAPER MCQs**

- (96) **Imperfect fungi belong to phylum.** (GRW 2021)  
 (a) zygomycota (b) ascomycota  
 (c) Deuteromycota (d) basidiomycota

**LAND ADAPTATIONS  
 IMPORTANCE OF FUNGI**

**KIPS MCQs**

- (97) **Fungi can tolerate:**  
 (a) High pH range (b) High temperature range  
 (c) High osmotic pressure (d) All of these

- (98) How many species of mushrooms are edible?  
 (a) 100 (b) 200  
 (c) 250 (d) 500
- (99) \_\_\_\_\_ is used to prevent migraine:  
 (a) Lovastatin (b) Griseofulvin  
 (c) Cyclosporin (d) Ergotin
- (100) \_\_\_\_\_ percentage of world fruit is lost annually due to fungi:  
 (a) 10-20 (b) 15-50  
 (c) 25-30 (d) 35- 45
- (101) Smut in wheat is caused by:  
 (a) *Ustilago mayadis* (b) *Ustilago tritici*  
 (c) *Puccinia* (d) Both a & b
- (102) \_\_\_\_\_ is used for lowering blood cholesterol:  
 (a) Cyclosporine (b) Lovastatin  
 (c) Ergotine (d) Griseofulvin
- (103) Rust is caused by:  
 (a) *Rhizopus* (b) *Phytophthora*  
 (c) *Puccinia* (d) *Ustilago*
- (104) Griseofulvin is used to:  
 (a) Inhibit fungal growth (b) Prevent tissue rejection  
 (c) Relieve migraine (d) Lower blood cholesterol
- (105) Fungi commonly used in genetic research:  
 (a) Yeast (b) Neurospora  
 (c) Amanita (d) Both a & b
- (106) Candidiasis is disease characterized with:  
 (a) Lung infection (b) Oral & vaginal thrush  
 (c) Convulsion and delusion (d) Gangrene
- (107) Fungi grow on shower curtain and other moist surface:  
 (a) *Aspergillus* (b) Mildew  
 (c) *Morchella* (d) *Rhodotorula*
- (108) How many species of mushrooms are edible?  
 (a) 100 (b) 200  
 (c) 250 (d) 500
- (109) Lovastatin is fungal product which lower the blood:  
 (a) Sugar (b) Urea  
 (c) Ca<sup>++</sup> (d) Cholesterol
- (110) Histoplasmosis is a:  
 (a) Heart disease (b) Kidney disease  
 (c) Lung disease (d) None of these

**PAST PAPER MCQs**

- (111) Lovastatin is used for lowering blood: (LHR 2017)  
 (a) Pressure (b) Glucose  
 (c) Cholesterol (d) Uric acid
- (112) Histoplasmosis is a (GRW 2018)  
 (a) Heart disease (b) Kidney disease  
 (c) Lungs disease (d) Liver disease
- (113) A kind of headache migraine is treated by (DGK 2019)  
 (a) Ergotine (b) Lovastatin  
 (c) Griseofulvin (d) *Aspergillus*



- (114) **Poisonous mushrooms are called:** (BWL 2019)  
(a) Toadstools (b) Truffles  
(c) Morels (d) Agaricus
- (115) **Citric acid is obtained from:** (MCN 2017)  
(a) Penicillium (b) Aspergillus  
(c) Sacchomyces (d) Neurospora
- (116) \_\_\_\_\_ is used to inhibit fungal growth. (MTN 2017)  
(a) Lovastatin (b) Ergotine  
(c) Cyclosporine (d) Griseofulvin
- (117) **The disease caused by a Fungus is:** (BWP 2017)  
(a) Ring worm (b) Tetanus  
(c) Polio (d) Smallpox
- (118) **Histoplasmosis is:** (RWP 2017)  
(a) Heart disease (b) Kidney disease  
(c) Lung disease (d) Skin disease
- (119) **Lovastatin is used for lowering blood:** (LHR 2017 )  
(a) Pressure (b) Cholestrol  
(c) Glucose (d) Salts
- (120) **Lovastatin is fungal product which lowers blood:** (LHR-2021)  
(a) Sugar (b) Cholesterol  
(c) Urea (d) Calcium
- (121) **Candida albicans is a** (SWL 2019)  
(a) Smut (b) Rust  
(c) Yeast (d) Morel
- (122) **The species of mushrooms which are edible are about:** (FSD 2019)  
(a) 100 (b) 1000  
(c) 200 (d) 2000
- (123) **Which of the following is not symptom of Ergotism?** (RWP 2021)  
(a) Convulsion (b) Psychotic delusion  
(c) Gangrene (d) Indigestion

**ANSWER KEY**

(Topic-Wise Multiple Choice Questions)

1	d	21	d	41	b	61	d	81	d	101	e	121	e
2	d	22	b	42	c	62	b	82	c	102	b	122	c
3	c	23	b	43	b	63	b	83	c	103	C	123	d
4	a	24	d	44	d	64	b	84	a	104	a		
5	b	25	c	45	b	65	b	85	a	105	d		
6	a	26	c	46	d	66	c	86	b	106	b		
7	c	27	d	47	b	67	d	87	c	107	d		
8	c	28	c	48	c	68	c	88	d	108	b		
9	c	29	c	49	d	69	c	89	b	109	d		
10	a	30	d	50	b	70	c	90	d	110	c		
11	d	31	b	51	a	71	a	91	c	111	c		
12	c	32	d	52	b	72	d	92	<b>b</b>	112	c		
13	b	33	a	53	c	73	c	93	d	113	a		
14	a	34	a	54	d	74	d	94	c	114	a		
15	a	35	b	55	a	75	c	95	b	115	b		
16	c	36	d	56	a	76	b	96	c	116	d		
17	d	37	b	57	c	77	c	97	d	117	a		
18	a	38	a	58	c	78	c	98	b	118	c		
19	b	39	a	59	a	79	b	99	d	119	b		
20	c	40	b	60	c	80	b	100	b	120	b		

**INTRODUCTION & BODY OF FUNGUS**

**KIPS QUESTIONS**

**Q: 1 Define nuclear mitosis in fungi.**

**Ans:** In the nuclear mitosis nuclear envelop (nuclear membrane) does not break. The mitotic spindle is formed within the nucleus. The nuclear membrane constricts between the two clusters of daughter chromosomes and divides the nucleus.

**PAST PAPER QUESTIONS**

- Q: 2** What do you know about Armillaria? (SGD 2017)
- Q: 3** Differentiate between septate and non-septate hyphae. (LHR 2017)
- Q: 4** What are hyphae and mycelium? (GRW 2018)
- Q: 5** Define nuclear mitosis. In which kingdom it is found. (GRW 2019)
- Q: 6** Differentiate between septate and non-septate hyphae. (LHR 2021)
- Q: 7** How fungi differ from animals? (GRW 2021)
- Q: 8** What do you know about nuclear mitosis? (MLT 2019)
- Q: 9** How composition of fungus cell wall is advantageous to fungi? (SRG 2019)
- Q: 10** Differentiate between septate and non-septate hyphae. (RWP 2019)
- Q: 11** What is hypha? How unseptate hyphae are advantageous? (FSD 2021, SRG 2019)
- Q: 12** What is nuclear mitosis? (FSD 2019, MLT 2021, DGK GRW 2021)
- Q: 13** How composition of fungus cell wall is advantageous to fungi? (FSD 2021)
- Q: 14** Define nuclear mitosis in fungi. (LHR 2022)
- Q: 15** How karyogamy is different from plasmogamy? (FSD 2022)
- Q: 16** What is a Dikaryotic hypha? (BWL 2022)
- Q: 17** Differentiate between plasmogamy and karyogamy. (BWL 2022)

**NUTRITION IN FUNGI**

**KIPS QUESTIONS**

**Q: 18 Differentiate between Saprobies and Parasites.**

**Ans:**

SAPROBES	PARASITES
They are decomposers that obtain their food (energy, carbon nitrogen) directly from dead organic matter such as fallen trees, animal corpses, or the wastes of live organisms.	Parasitic fungi absorb nutrients directly from the living host cytoplasm with the help of special hyphal tips called haustoria. They commonly attack plants than animals.
<b>Examples:</b> <i>Mucor</i> , <i>Pencillium</i> , <i>Agaricus</i> , <i>Saccharomyces</i> .	<b>Examples:</b> Rust and smut fungi.

**Q: 19 Which groups of fungi form lichens?**

**Ans:** The fungi are mostly Ascomycetes and imperfect fungi and few Basidiomycetes (about 20 out of 15000 species of lichens).

**Q: 20 What are bioindicators?**

**Ans:** The organisms which are either sensitive or resistant to a particular type of pollution are said to be the bioindicators e.g., lichens are very good bio-indicators of air quality as they are very sensitive to pollution.

**Q: 21 What are the major decomposers of the biosphere?**

**Ans:** Fungi, along with saprobic bacteria, play a vital role in the decomposition and recycling of inorganic nutrients in the ecosystem. Without decomposition, all the essential nutrients would soon become locked up in the form of dead animals, plants and the wastes of animals and plants. Therefore the essential nutrients would be unavailable to the organisms.

**Q: 22 How we classify lichen? What are their different types?**

**Ans: Lichen:**

Lichens are symbiotic associations between certain fungi and photoautotrophs.

**Classification:**

Lichen are classified on the base in size, colour, overall appearance and growth forms.

**Types:**

There are three growth forms of lichens:

(a) **Crustose Lichens:**

These lichens grow tightly attached to the rocks or tree trunks etc.

Example is *Lecanur*.

(b) **Foliose Lichens:**

They are leaf-like.

Examples is *Parmelia*.

(c) **Fruticose Lichens:**

They are branching.

Example is *Ramalina*.

**Q: 23 What is the ecological importance of Lichens?**

**Ans:**

- They are ecologically very important as bioindicators of the air pollution.
- They are also important in ecological succession.

**Q: 24 Differentiate between endomycorrhizae and ectomycorrhizae.**

Endomycorrhizae	Ectomycorrhizae
The fungal hyphae penetrate the outer cells of plant root forming coils, swelling and minute branches, and also extend out in surrounding soils.	The fungal hyphae surround and extend between the cells but do not penetrate the cell walls of the roots. The ectomycorrhizae are mostly formed with pines, fires, etc.

**Q: 25 What is the importance of mycorrhizae for plants?**

**Ans:** It helps the root in the direct absorption of phosphorus, Zinc, Copper and other nutrients form soil.

The plants show better growth which has mycorrhizal association.

**PAST PAPER QUESTIONS**

- Q: 26** What is the importance of mycorrhizae for plants? (SWL 2017)
- Q: 27** What are Lichens? Give example. (MTN 2017)
- Q: 28** What are lichens? (RWP 2016, DGK 2016, MTN 2017)
- Q: 29** What is the function of constricting ring? (RWP 2017)
- Q: 30** Differentiate between obligate and facultative parasites. (GRW 2017)
- Q: 31** What is mycorrhizae? Give example. (LHR 2019)
- Q: 32** Write down a short note on omnivorous fungi. (GRW 2021)
- Q: 33** What are haustoria? (SWL 2019)
- Q: 34** What role fungi and algae play in lichen? (MLT 2019)
- Q: 35** Differentiate between endomycorrhizae and ectomycorrhizae. (MLT 2019)
- Q: 36** Define mycorrhizae. What is its effect on its partner? (DGK 2019)
- Q: 37** Differentiate between obligate and facultative parasites. (SWL 2021)
- Q: 38** Describe carnivorous fungi. Give one example. (MLT 2021)
- Q: 39** What is mycorrhiza? (MLT 2021)
- Q: 40** Differentiate between endo and ectomycorrhizae. (DGK 2021)
- Q: 41** What are lichens? Give its ecological importance. (RWP 2021)

**REPRODUCTION****KIPS QUESTIONS**

**Q: 42 Differentiate between spore and conidium.**

**Ans:** Both spore and conidium are most common means of asexual reproduction in fungi. However, some spores (ascospores and basidiospores) are produced during sexual reproduction.

Spore	Conidia
They are both sexual and asexual in nature.	They are only asexual.
They are produced through sporangiothecium.	They are produced through conidiophore.

**Q: 43 Differentiate between plasmogamy and karyogamy.**

**Ans:**

- **Plasmogamy** is the fusion of cytoplasm
- **Karyogamy** is the fusion of nuclei.

**Q: 44 Enlist various land adaptations by fungi.**

**Ans:**

- (1) They have extensive system of fast-spreading hyphae.
- (2) They have decay resistant chitin in their cell wall.
- (3) Their spores and conidia are dispersed through wind.
- (4) They are more tolerant to pH and temperature than bacteria.

**PAST PAPER QUESTIONS:**

- Q: 45** Write two differences between spores and conidia. (SWL 2017)
- Q: 46** Differentiate between karyogamy and plasmogamy. (FSD 2017)
- Q: 47** Differentiate between fragmentation and Budding in Fungi. (MTN 2017)
- Q: 48** What are conidia and spores? (LHR 2017)
- Q: 49** Differentiate between conidiophores and coenocytic hypha. (LHR 2018)
- Q: 50** Differentiate between conidia and conidiophore. (GRW 2018)
- Q: 51** Name the fruiting body of fungi. Ascomycota and basidiomycota. (LHR 2021)
- Q: 52** Define dikaryotic phase with example. (MLT 2019)
- Q: 53** Differentiate between Plasmogamy and Karyogamy. (BWL 2019)
- Q: 54** What is Dikaryotic Hyphae and how it is formed. (BWL 2019)
- Q: 55** Differentiate between Plasmogamy and Karyogamy. (BWL 2021)
- Q: 56** Differentiate between karyogamy and plasmogamy. (RWP 2021)
- Q: 57** How heterokaryotic hyphae are formed? (MLT 2022)
- Q: 58** What are septate and non-septate hyphae (SWL 2022)
- Q: 59** Write down two differences between spores and conidia. (RWP 2022, GRW 2022)
- Q: 60** Differentiate between plasmogamy and karyogamy. (SRD 2022)

**CLASSIFICATION****KIPS QUESTIONS**

**Q: 51 What are the basis of classification of fungi?**

**Ans:** Fungi are classified into four main groups on the basis of.

- (1) The type of their sexual reproductive structures.
- (2) Methods of reproduction.
- (3) Types of hyphae

**ZYGOMYCOTA****KIPS QUESTIONS**

**Q: 62** What types of sexual spores are produced by the members of class zygomycetes?

**Ans:** Zygospores.

**PAST PAPER QUESTIONS**

**Q: 63** What are zygomycetes? Why they are named so? (DGK 2019)

**ASCOMYCOTA****KIPS QUESTIONS**

**Q: 64** Explain mode of reproduction in yeast.

**Ans:**

**PAST PAPER QUESTIONS**

**Q: 65** Write the scientific name of yeast. (FSD 2019)

**Q: 66** Differentiate between asci and ascarsps (DGK 2021)

**Q: 67** Write a brief note on yeast. (SWL 2022)

**BASIDIOMYCOTA****KIPS QUESTIONS**

**Q: 68** Why rusts and smuts are called “Rusts” and “Smuts”.

**Ans: Rusts:**

Rusts are called so because of numerous rusty, orange-yellow coloured disease spots on their host surface (mostly stem, leaves), later revealing brick/rust-red spores of the fungus.

**Smuts:**

Smuts are called so because of their black, dusty spore masses that resembles soot or smut; these spore masses replace the grain kernels such as those of wheat, corn etc.

**PAST PAPER QUESTIONS**

(Lahore & Gujranwala Boards)

**Q: 69** What are rusts and smuts diseases of plants? (GRW 2017)

**Q: 70** What are rusts and smuts diseases of plants? (GRW 2017)

**Q: 71** Differentiate between ascus and basidium. (LHR 2018, SGD 2017)

**Q: 72** Define rust. Give example. (LHR 2019)

**Q: 73** Why rust and smut are called so? (DGK 2022)

**DEUTEROMYCOTA****KIPS QUESTIONS**

**Q: 74** Define Parasexuality?

**Ans:** Parasexuality is the genetic recombination in which portions of chromosomes of two nuclei lying in the same hypha are exchanged.

It is type of reproduction found in Deuteromycetes (imperfect fungi)

**PAST PAPER QUESTIONS**

**Q: 75** What is meant by parasexuality, give its importance? (LHR 2018)

**Q: 76** Define parasexuality. (SWL 2019, GRW 2019)

**Q: 77** What is parasexuality? (RWP 2022, DGK 2022, GRW 2022)

**LAND ADAPTATIONS****KIPS QUESTIONS**

**Q: 76** Write down any three land adaptations of fungi.

**Ans:**

**IMPORTANCE OF FUNGI****KIPS QUESTIONS**

**Q: 79** What are aflatoxins?

**Ans:** Some strains of *Aspergillus flavus* produce one of the most carcinogenic mycotoxins called aflatoxins.

**Q: 80** Which yeast is most exploited yeast and describe its some function?

**Ans:** *Sacharomyces cerevisiae* are the most exploited yeast.

**Functions:**

- It used in the production of bread and liquor.
- It is the most common fermenting yeast.
- It is also used in genetic and biological research.

**Q: 81** What is Histoplasmosis?

**Ans:** Histoplasmosis is a serious infection of lungs caused by inhaling spores of a fungus which is common in soil contaminated with bird's faeces. If infection spreads into blood stream and then to other organs (which is very occasional), it can be serious and even fatal.

**Q: 82** What do you know about *Rhodotorula*?

**Ans:** It is pink yeast that grows on shower curtains and other moist surfaces.

**Q.2** What is cause and effects of aspergillosis?

**Ans:** *Aspergillus fumigatus* causes aspergillosis, but only in persons with defective immune system such as AIDS and may cause death. Some of their strains produce one of the most carcinogenic mycotoxins called aflatoxins.

**Q: 83** Give names of four plant diseases caused by fungi.

**Ans:**

- Powdery mildews (on grapes, rose and wheat etc.)
- Ergot of rye
- Red rot of sugar cane
- Potato wilt
- Cotton root rot
- Apple scab
- Brown rot of peaches, plums, apricots and cherries

**PAST PAPER QUESTIONS**

**Q: 84** Name some Edible Fungi. (RWP 2017)

**Q: 85** What are Aflatoxins? (RWP 2017)

**Q: 86** What is the economic importance of fungi? (RWP 2017)

**Q: 87** What is histoplasmosis? How does its infection spread? (LHR 2017)

**Q: 88** What are toad stools? Give example. (LHR 2018)

**Q: 89** What are symptoms of ergotism? (LHR 2019)

**Q: 90** How fungi is economically helpful in food industry? (LHR 2021)

**Q: 91** Write the function of penicillin and lovastatin (LHR 2021)

**Q: 92** Describe some antibiotics obtained from fungi (GRV 2021)

**Q: 93** How fungi is economically helpful in the manufacture of antibiotics and other drugs? (SWL 2021)

**Q: 94** Define toad stools. Give any two example. (MLT 2021)

**Q: 95** Define egotism. (DGK 2021)

**Q: 96** What is histoplasmosis? (DGK 2021)

**Q: 97** What is Ergotism? How it is caused? (BWL 2021)

**Q: 98** List six plant diseases caused by fungi. (LHR 2022)

**Q: 99** Name four disease caused by fungi. (FSD 2022)