

南方科技大学

2024 年硕士生入学考试大纲

考试科目代码：811

考试科目名称：细胞生物学

一. 考试要求

1. 掌握细胞生物学的基础概念和理论 (To understand the essential concepts and theories of cell biology)
2. 懂得如何运用细胞生物学基础概念、理论分析、及一定的细胞生物学技术解决细胞相关生物学问题 (To be capable of resolving cell-related biological questions by applying essential cell biology concepts and theories, and some basic experimental skills)

二. 考试内容

1. 细胞生物学发展历史 (History of cell biology)
2. 细胞的基本结构 (Basic structures of a cell)
3. 细胞生物学研究基本技术 (Essential cell biology techniques)
4. 细胞器的结构与功能 (Organelles and their functions)
 - 4.1. 内膜系统 (Endomembrane system)
 - 4.2. 内质网 (Endoplasmic reticulum)
 - 4.3. 高尔基体 (Golgi apparatus)
 - 4.4. 溶酶体 (Lysosome)
 - 4.5. 微体 (Microsome)
 - 4.6. 线粒体 (Mitochondrion)
 - 4.7. 叶绿体 (Chloroplast)
 - 4.8. 细胞骨架 (Cytoskeleton)
 - 4.9. 微丝 (Microfilament)
 - 4.10. 微管 (Microtubule)
 - 4.11. 中间纤维 (Intermediate filament)

- 4.12. 核糖体 (Ribosome)
5. 细胞基质及其功能 (Cell matrix and its functions)
 6. 细胞核与染色体 (Nucleus and chromosome)
 7. 细胞膜和跨膜运输 (Cell membrane and trans-membrane transportation)
 8. 蛋白质分选与膜泡运输 (Protein sorting and vesicle trafficking)
 9. 细胞通讯和信号转导 (Cell communication/signaling)
 10. 细胞的连接 (Cell junction and adhesion)
 11. 细胞增殖、分化及多细胞生物胚胎发育 (Cell proliferation, differentiation, and development of multicellular organisms)
 12. 各类主要细胞类型简介: 干细胞, 生殖细胞, 肿瘤细胞, 免疫细胞, 神经细胞等(Introduction of main cell types: stem cells, germ cells, cancer cells, immune cells, neural cells, and so on)
 13. 细胞死亡与细胞衰老 (Cell senescence and death)

三. 试卷结构

1. 选择题, 简答题, 综合论述题 (Type of questions: choices, short answer and comprehensive questions/short essays)
2. 答卷方式: 闭卷, 笔试 (Way of answering questions: closed book/written examination)
3. 语言: 中文试题, 可中、英文答题 (Language: the test paper is in Chinese, yet answering questions in either Chinese or English is permitted)
4. 答题时间: 180 分钟 (Exam duration:180 minutes)

四. 参考书目

1. 《细胞生物学》2020年5月第五版, 丁明孝、王喜忠、张传茂、陈建国主编, 高等教育出版社出版
2. Molecular Biology of the Cell, 2014, 6th edition, Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts and Peter Walter. Garland Science