College and Branch Analysis

1. **How many colleges are there in each district of Andhra Pradesh?**

SELECT District_Name, COUNT(*) AS College_Count
FROM [Apecducation].[dbo].[colleges]
GROUP BY District_Name;

2. **What are the top 5 districts with the highest number of colleges?**

SELECT District_Name, COUNT(*) AS College_Count
FROM [Apecducation].[dbo].[colleges]
GROUP BY District_Name
ORDER BY College_Count DESC
LIMIT 5;

3. **Which branches are offered by the most number of colleges?**

SELECT b.Bname, COUNT(c.Institute_Code) AS College_Count
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY b.Bname
ORDER BY College_Count DESC;

4. **How many branches are offered by each college?**

SELECT c.Institute_Name, COUNT(b.Bid) AS Branch_Count
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY c.Institute_Name;

5. **What is the distribution of college types across districts?**

SELECT District_Name, College_Type, COUNT(*) AS College_Count
FROM [Apecducation].[dbo].[colleges]
GROUP BY District_Name, College_Type
ORDER BY District_Name;

Fee and Seat Analysis

6. **What is the average fee for each branch across all colleges?**

SELECT b.Bname, AVG(c.Fee) AS Average_Fee
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode

GROUP BY b.Bname;

7. Which colleges have the highest and lowest fee structures for specific branches?

```
SELECT c.Institute_Name, b.Bname, c.Fee
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
WHERE b.Bname = 'Engineering' -- replace 'Engineering' with specific branch name
ORDER BY c.Fee DESC; -- For highest fees (use ASC for lowest)
```

8. How many convener seats are available per branch in each college?

```
SELECT c.Institute_Name, b.Bname, c.Convener_Seats
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode;
```

9. Which branch has the highest number of convener seats across all colleges?

```
SELECT b.Bname, SUM(c.Convener_Seats) AS Total_Convener_Seats
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY b.Bname
ORDER BY Total_Convener_Seats DESC;
```

Affiliation and Educational Quality

10. What are the top universities with the most affiliated colleges?

```
SELECT Affiliated_To, COUNT(*) AS College_Count
FROM [Apecducation].[dbo].[colleges]
GROUP BY Affiliated_To
ORDER BY College_Count DESC;
```

11. How many minority institutions are there, and how are they distributed across regions?

```
SELECT Region, COUNT(*) AS Minority_Colleges
FROM [Apecducation].[dbo].[colleges]
WHERE Minority = 'Yes'
GROUP BY Region;
```

12. Which colleges have the highest number of co-educational seats?

```
SELECT Institute_Name, Convener_Seats
FROM [Apecducation].[dbo].[colleges]
```

WHERE Co_Educ = 'Yes'
ORDER BY Convener_Seats DESC;

Geographic and Regional Trends

13. What are the regional differences in terms of number of colleges, branches offered, and seat availability?

SELECT Region, COUNT(c.Institute_Code) AS College_Count, COUNT(b.Bid) AS
Branch_Count, SUM(c.Convener_Seats) AS Total_Seats
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY Region;

14. Are there any regions in AP that lack certain branches or types of educational institutions?

SELECT Region, b.Bname, COUNT(c.Institute_Code) AS College_Count
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY Region, b.Bname
HAVING COUNT(c.Institute_Code) = 0; -- To find regions with no colleges offering a
branch

15. What is the trend of colleges in rural vs urban areas within districts?

SELECT District_Name, Place, COUNT(*) AS College_Count
FROM [Apecducation].[dbo].[colleges]
GROUP BY District_Name, Place;

Time-Based Trends (If Historical Data Available)

16. How has the number of colleges and branches grown over the past decade?

- Requires a year_established or similar field in your data.

SELECT YEAR(c.Year_Established) AS Year, COUNT(c.Institute_Code) AS
College_Count
FROM [Apecducation].[dbo].[colleges] c
GROUP BY YEAR(c.Year_Established)
ORDER BY Year;

17. What are the trends in fee changes over the past few years across various branches?

SELECT YEAR(c.Year_Established) AS Year, b.Bname, AVG(c.Fee) AS Average_Fee

```
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY YEAR(c.Year_Established), b.Bname
ORDER BY Year;
```

Student and Placement-Related Analysis (If Additional Data Available)

18. Which branches have the highest student enrollment across the state?

- Requires student_enrollment data.

```
SELECT b.Bname, SUM(c.Student_Enrollment) AS Total_Enrollment
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY b.Bname
ORDER BY Total_Enrollment DESC;
```

19. What is the employment rate of students graduating from specific branches?

- Requires employment_rate or similar data.

```
SELECT b.Bname, AVG(c.Employment_Rate) AS Average_Employment_Rate
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY b.Bname
ORDER BY Average_Employment_Rate DESC;
```

20. What is the average placement package for students from different types of colleges and branches?

- Requires placement_package data.

```
SELECT c.College_Type, b.Bname, AVG(c.Placement_Package) AS Average_Package
FROM [Apecducation].[dbo].[colleges] c
JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
GROUP BY c.College_Type, b.Bname;
```

Data Quality and Governance Analysis

21. Are there any missing or inconsistent data in branch codes, college affiliations, or fee structures?

```
SELECT *
FROM [Apecducation].[dbo].[colleges]
WHERE Branch_Code IS NULL OR Affiliated_To IS NULL OR Fee IS NULL;
```

22. How many colleges have outdated or incomplete branch information?

```
SELECT *
FROM [Apecducation].[dbo].[colleges] c
LEFT JOIN [Apecducation].[dbo].[Branch] b
ON c.Branch_Code = b.Bcode
WHERE b.Bcode IS NULL;
```

These queries will give you a solid foundation for analyzing the Andhra Pradesh education system based on the available data in your [Apecducation] database.